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Prakash Karat

On the Programme of the CPI

For a Communist Party, its Programme, which encompasses the strategic goals of the Party, and thus covers an entire stage of the revolution, is an important and basic document.

In the Communist movement in India, particularly after Independence, writing such a Programme was fraught with differences and divergent views. The struggle within the Communist Party of India (CPI) for nearly a decade centred on the character of the ruling class and state power, and, consequently, the strategy of the Indian revolution and the Programme to be adopted.

The last attempt to agree on Programme within the united Party was in 1961 at the 6th Congress held in Vijayawada. Two draft Programmes were presented, and irreconcilable differences led to shelving the Programme.

It was only in 1964, after the split in the CPI and the formation of the Communist Party of India (Marxist), that the two parties were able to discuss and adopt separate Programmes — at the 7th Congress of the CPI in Bombay and the 7th Congress of the CPI (M) in Calcutta.

Since, even after a prolonged struggle, the very strategy for the Communist Party remained in contention, the only solution was for

the parties to separate and formulate their own Programmes. If the differences had been with respect to the tactical line to be adopted, or some divergent understanding on ideological issues, the split would not have taken place.

Six decades have passed since the two Communist parties adopted their basic strategic documents. Over this period of time, the two parties have been able to arrive at a common understanding on major political issues and the tactical line to be pursued in the prevailing political situation. This has enabled them to work together and strengthen Left unity.

The CPI (M) updated its Programme at a special conference held in 2000 in Thiruvananthapuram. The analysis of the international situation and national developments, especially with respect to class relations, were revised and updated. However, the Programme retained the core formulations regarding the stage of the revolution, the character of the state and the nature of the class alliance of the People's Democratic Front and its leadership. The work of updating the Programme extended over a period of eight years, the decision to update it having been taken at the 14th Congress of the Party in 1992.

PROLONGED EFFORTS

As far as the CPI is concerned, the exercise of drafting a new Programme was more prolonged and went through various stages. In 1986, the 13th Congress of the party decided to set up a Drafting Commission to re-draft the Party Programme that had been adopted in 1964. A seven-member Commission prepared a draft Programme that was placed before the 14th Congress at Patna in 1989. The Congress was, however, unable to adopt the draft. At the 15th Congress held in Hyderabad in 1992, a draft programmatic document was discussed and a "Programme Document" adopted. This was an interim step that took note of the major changes in the international and national arenas. This was not, however, a full-fledged Party Programme that covered core issues such as the character of the state, the nature of the class alliance for the democratic revolution, and so on.

Towards this end, the 16th party Congress decided in 1995 that

the new National Council set up a Commission to prepare a draft Programme. Such efforts continued.

Finally, a new Party Programme was adopted at the 22nd Congress held in Puducherry in March 2015. Since this is a Programme that has emerged out of a protracted period of discussions, it has significance for the future course of the CPI and of the Communist movement in the country.

It will be useful, therefore, to undertake a critical appraisal of the Programme of the CPI.

The essence of a party Programme is based on a class analysis to map out the stage of the revolution, the character of the state, and the class alliance and leadership of that revolutionary front that is required to replace the existing state structure and to bring about the transition to socialism.

CHARACTER OF STATE POWER

In the formulation of the stage of the revolution, both the CPI and the CPI (M) Programmes adopted in 1964 had characterised the stage as the democratic stage. This was in recognition of the need to complete the anti-imperialist and anti-feudal tasks that remained unfinished.

After achieving political independence, differences arose on the question of the characterisation of the Indian state and the revolutionary class alliance that needs to be forged to advance the revolutionary movement against the ruling class and state structure. The class analysis of Indian society had to establish who the dominant exploiting classes were that constituted the ruling class. It is this ruling class that controls the state and determines its character. This is the crucial point of the strategy because it determines who the main enemy is and against whom the revolutionary movement should be directed.

DIVERGENT VIEWS ON STATE POWER

In the case of the CPI (M), the state was characterised as follows:

> The present Indian state is the organ of the class rule of the bourgeoisie and landlords led by the big bourgeoisie, who are increasingly collaborating with foreign finance capital in pursuit of the capitalist path of development.

> This class character essentially determines the role and function of state in the life of the country.

This characterisation was retained without any change in the updated Programme.

In its Programme of 1964, the CPI characterised the state as follows:

> The state in India is the organ of the class rule of the national bourgeoisie as a whole, which upholds and develops capitalism and capitalist relations of production, distribution and exchange in the national economy of India.
>
> In the formation and exercise of governmental power the big bourgeoisie wields considerable influence.
>
> The national bourgeoisie compromises with the landlords, admits them in the ministries and governmental composition, especially at the State levels.

This formulation was amended at the 8th Congress of the CPI in 1968 and the amended paragraph read as follows:

> The state in India is the organ of the class rule of the national bourgeoisie as a whole, in which the big bourgeoisie holds powerful influence. This class rule has strong links with the landlords. These factors give rise to reactionary pulls on the state power.

The difference in the characterisation of the state in the two Programmes was substantial and it had a significant bearing on the strategy, class alliances, and tactics of the two parties.

The main differences with the CPI (M) Programme were as follows.

While the CPI (M) Programme placed the big bourgeoisie in the leadership of the class alliance that controls the Indian state, the CPI Programme denied this leading role and, in the 1964 Programme, maintained that the big bourgeoisie "*wielded considerable influence.*" This was changed to "*holds powerful influence*" by the 1968 amendment.

This was the crux of the difference in the characterisation of the Indian state in the two Programmes. The big bourgeoisie developed as a powerful stratum within the Indian capitalist class right from the outset. In contrast to the development of capitalism in Europe, where

the big bourgeoisie and the monopoly stage came about at a later, mature stage of capitalist development, in the specific conditions in which capitalism grew in India under colonialism, the development of the big bourgeoisie and monopoly houses began at an earlier stage. The growth of the big bourgeoisie and its dominance and grip over the capitalist class as a whole were strengthened in the decades after Independence.

It is the big bourgeoisie, being in the leadership of the state, that conditioned a particular type of capitalist development. It compromised with imperialism and maintained its alliance with landlordism. As the CPI (M) Programme stated:

> It utilised its hold over the state to strengthen its position by attacking the people on the one hand and seeking to resolve the conflicts and contradictions with imperialism and landlordism by pressure, bargain and compromise on the other.

In this process, it has forged strong links with foreign monopolists and is sharing power with landlords.

The CPI Programme portrayed the state in India as the class rule of the national bourgeoisie as a whole in which the big bourgeois section does not exercise leadership but only holds powerful influence. Further, unlike the CPI (M) Programme, which saw the bourgeois-landlord alliance as the bedrock of state power, the CPI Programme maintained that the state power has only "strong links with the landlords." The landlords were not part of the state structure and by implication not part of the ruling class.

Another difference in the characterisation of the two Programmes in the characterisation of state is that the CPI (M) saw foreign finance capital to be in collaboration with the ruling class led by the big bourgeoisie in pursuit of the capitalist path of development. Thus, both landlordism and imperialism had a more integral connection with the ruling classes and the state structure in the CPI (M) formulation than in the formulation of the CPI. In the CPI's characterisation, imperialism and foreign finance capital had no role whatsoever in the ruling class set-up.

This divergence in the characterisation of the state had major implications. For the CPI, since the national bourgeoisie as a whole was in the leadership of the state and the big bourgeoisie was only

holding powerful influence, the attitude to the state was bound to be different to that of the CPI (M). Further, with the landlords not being an intrinsic part of the ruling classes controlling the state, there was an overestimation of the bourgeois state *vis-à-vis* the anti-imperialist and anti-feudal tasks. The same estimation applied to the role of the "national bourgeoisie."

To characterise the state as a state of the national bourgeoisie was also to say that the state in India was not a state of an enemy class. The national bourgeoisie both held power and was at the same time a potential participant in the CPI's national democratic revolution. The national bourgeoisie was a class that had to be prodded, steered, and pushed in a progressive direction by the working class, and helped by the working class to resist the "reactionary pulls" exerted on state power by the big bourgeoisie, imperialism, and the landlords. This conception of the state was fully in accordance with and influenced by the view of the Indian state held by the Communist Party of the Soviet Union after 1956.

This is what led to a softness vis-à-vis the ruling class and the premier ruling class party, the Congress. For the national democratic revolution — which is anti-imperialist, anti-feudal and anti-monopoly – *the state and ruling party of the national bourgeoisie held the potential to be an ally*. The absence of landlords and imperialism in the ruling class would lead to such a strategic conclusion. At the tactical level, this characterisation was also responsible for the willingness of the CPI to join Central governments dominated by the bourgeois parties when an opportunity afforded itself (as in 1996 and 2004).

Efforts to review this characterisation did take place in the course of the discussions for a new draft Programme. In the draft Programme presented to the 14th Congress of the party held in March 1989, the characterisation of the state remained the same as in the 8th Congress amendment of 1968, viz.,

> The state in India is the organ of the class rule of the national bourgeoisie as a whole, in which the big bourgeoisie holds powerful influence. This class rule has strong links with the landlords. These factors give rise to reactionary pulls on the state power.

In the Programme Commission that undertook the work of

drafting the Programme, the Convenor of the Commission, Jagannath Sarkar, held a different view. He had a dissenting amendment regarding the character of the state. The first part of the amendment is as follows:

> The state in India is the organ of the class rule of the Indian bourgeoisie, which has landlords as its allies and in which the big bourgeoisie has come to exercise decisive control. The alliance of the Indian bourgeoisie with the landlords and the decisive control of the big bourgeoisie over the state impart reactionary tendencies in the Indian state.
>
> The bourgeoisie, the main element in the Indian state, had traditionally close relations with the landlords. During our freedom struggle, while the feudal princes and big landlords generally supported the British rule, the middle and small landlords generally supported the struggle against colonial slavery. This served to bring the landlords close to the bourgeoisie in the political sphere. This alliance has been carried forward after independence. (*Draft Programme of the Communist Party of India*, Communist Party Publication, 1989)

In Sarkar's formulation, the big bourgeoisie exercises "decisive control" over the Indian state. Moreover, his amendment acknowledged that there is an alliance of the bourgeoisie and the landlords. He also avoids to use the term "national bourgeoisie" in order to bring out the specific character of the big bourgeoisie as the most powerful stratum within the capitalist class.

Another member of the Programme Commission, P. K. Vasudevan Nair, also put forward an amendment that stated that the big bourgeoisie held "decisive influence."

In the new Programme adopted at the 22nd Congress, the characterisation of the state has undergone a major change. It reads as follows:

> 8.1 The state in India is the organ of the class rule of the bourgeoisie headed by corporate big business and monopolies. This class rule has strong links with the semi-feudal and capitalist landlords. This determines the economic and political policy of the government. It directs the capitalist development in agriculture. Operating within the World Capitalist System it develops links with international finance capital led by US and international financial institution like the World Bank and IMF.

The use of the term "national bourgeoisie" has been dropped, a

correct step. In a departure from the past formulations, it is acknowledged that the state is the organ of the class rule of the bourgeoisie, which is "*headed by corporate big business and monopolies*". The linkage with landlords continues to be described as "strong links" while the landlords have been characterised as "semi-feudal" and "capitalists." The new feature of the formulation is that this state structure "develops links with" international finance capital, a feature that is an addition to the earlier characterisation.

By acknowledging that corporate big business and monopolies are heading the bourgeois-run state in India, the CPI has come to a more accurate description of the character of the Indian state than before. The analysis of class developments that precedes this characterisation notes:

> One of the most striking results of the path of capitalist development is the concentration of capital with economic power in the hands of a few big monopolies who enrich themselves at the expense of the people and even other broad sections of the Indian bourgeoisie.

It is, however, difficult to understand why terms like corporate big business and monopolies are being used instead of the term "big bourgeoisie." The "big bourgeoisie" is a more comprehensive term which includes all sections of big capital. Corporates or corporations are only one legal form of ownership, i.e., the public limited/joint stock companies. Big corporates are part of the big bourgeoisie, so also big monopoly houses. Moreover, big capital is being deployed in various spheres outside the productive sector, too (consider, for instance, big business houses in the news media and entertainment). All these, when they assume a certain level of concentration of capital, must be considered to be part of the big bourgeoisie. While the intent of the formulation of "corporate big business and monopolies" may be correct, it is not sufficient to explain the full extent and coverage of the term "big bourgeoisie."

The characterisation of state power suffers from the drawback of keeping the landlords as a category external to the state structure. With the development of capitalism as the dominant form of production in agriculture, capitalist landlordism — and not a steadily declining semi-feudal landlordism — predominates. There are no grounds whatsoever to consider this landlordism as only having

"strong links" with the bourgeoisie. They are part and parcel of the ruling class. The term "landlord" is still being used as a separate category because there are remnants of semi-feudal relations to be eliminated.

At one point in the CPI Programme, the term "rural bourgeoisie" is used. The capitalist landlords are part of this rural bourgeoisie. To consider them outside the state structure is, therefore, unrealistic. In order to arrive at a correct understanding of the nature of the Indian state, it is necessary to take account of the compromise that the big bourgeoisie effected with landlordism in order to avoid a thorough-going implementation of land reforms as part of the completion of the tasks of the democratic revolution.

The recognition in the new CPI Programme of the link between international finance capital and the Indian state is also a step in the correct direction. This should have been taken forward to its logical conclusion – the development of the capitalist path in India itself requires collaboration between international finance capital and the Indian bourgeoisie. This is what is reflected in the CPI (M)'s formulation, that of "*increasing collaboration between the Indian ruling classes and foreign finance capital in pursuit of the capitalist path of development.*"

To sum up, the new characterisation of the Indian state in the CPI Programme is a step forward towards the correct depiction of the Indian state, though there are still some problems and weaknsesses in the understanding.

WHO WILL LEAD THE DEMOCRATIC REVOLUTION?

The other area of difference between the two Programmes has been on the question of the class alliance or front that will accomplish the democratic revolution and the question of who will exercise leadership of this front.

Though both the Party Programmes talk of the democratic stage of the revolution and the classes to be mobilised in the democratic front or alliance, there were differences between the two on the question of the leadership of the alliance. The CPI termed its front a "national democratic" front, while the CPI (M) termed the alliance the "people's democratic" alliance (or front).

In the 1964 Programme, the CPI Programme had explained the leadership of the national democratic alliance in the following way:

> The national democratic state in the hands of the National Democratic Front will be a transitional stage, in which power will be jointly exercised by all those classes which are interested in eradicating imperialist interests, ... the semi-feudal elements and breeding the power of the monopolies. In this alliance, the exclusive leadership of the working class is not yet established, though the exclusive leadership of the bourgeoisie no longer exists." (p. 41)

When faced with the criticism by the CPI (M) that neither the exclusive leadership of the working class nor the exclusive leadership of the bourgeoisie meant the joint leadership of the bourgeoisie and the working class, the CPI made a further clarification in the 8th Party Congress by adding a last to the paragraph. It reads thus: "*The leadership of this alliance belongs to firm anti-imperialist, anti-feudal, anti-monopoly forces.*" Even this formulation, however, still implied the joint leadership of various classes.

The next paragraph in the 1964 Programme states that:

> As the government of the national democratic front and the class alliance it represents will be based on the worker-peasant alliance as its pivot, the working class will increasingly come to occupy the leading position in the alliance, as it is this class which is the conscious inheritor and builder of the national democratic front. (p. 48)

Unlike the concept of joint leadership (of the working class and bourgeoisie) that characterised the national democratic front in the CPI Programme, the CPI (M) Programme states that

> 7.1 For the complete and thoroughgoing fulfilment of the basic tasks of the Indian revolution in the present stage it is absolutely essential to replace the present bourgeois-landlord state headed by the big bourgeoisie by a state of people's democracy led by the working class.

It proceeds to argue that

> In the present era, the proletariat will have to lead the democratic revolution as a necessary step in its forward march to the achievement of socialism. It is not the old type of bourgeois democratic revolution, but a new type of

> people's democratic revolution organised and led by the working class. (Para7.2)

This is not a dogmatic assertion but a formulation based on historical experience that shows that the bourgeoisies of the newly independent countries are incapable of carrying forward the democratic revolution. In particular, in India, where the big bourgeoisie leads state power, the central task is to dislodge the state power wielded by the bourgeois-landlord alliance headed by the big bourgeoisie. The strength of the worker-peasant alliance can be forged only under the leadership of the working class. Although some sections of the non-big bourgeoisie may become part of the people's democratic front, they cannot be relied upon as firm allies, and their role will depend on how strong the worker-peasant alliance is. In India, after more than six decades of capitalist development since Independence and particularly after the phase of neo-liberal capitalism began, the contradiction between the big bourgeoisie and the non-big bourgeoisie has been muted. This feature of contemporary history has not been taken into account in the CPI Programme.

The new Programme of the CPI continues to stick to the concept of a joint leadership of various classes and strata in the phase of completing the democratic revolution and preparing for the transition to socialism. It states:

> The classes and sections of people that are in action for carrying out these tasks of the democratic revolution whether spontaneously or consciously are the working class, the rural proletariat, the working peasantry, the progressive democratic, secular intelligentsia and the revolutionary sections of the middle class and a section of middle and small bourgeois. Rallying around a firm worker-peasant alliance, they can lead the country during the period of advancing the democratic revolution by replacing the big bourgeoisie from the leadership. (para 9.1)

To expect classes ranging from the working class, the rural proletariat to the middle and small bourgeoisie to provide the leadership in the transition period to socialism is blurring the question of who can provide consistent leadership against the big bourgeoisie, imperialism, and semi-feudal remnants.

The CPI Programme envisages the transition period to be managed by a class alliance whose leadership is not in the hands of

the working class. It merely states that, over a protracted period and by the end of the transition, the leadership of the working class and its broad democratic alliance will be established.

> There will be many shocks and social upheavals which will ultimately result in the leadership of the bourgeoisie getting replaced by the leadership of the working class and its broad democratic allies.

There is a clear and fundamental difference here between the approach of the CPI and the understanding of the CPI (M). For the CPI (M), the transition period from the accomplishment of the democratic revolution to the socialist stage can only be possible if the leadership of the working class is established in the revolutionary class alliance. The CPI Programme sees the leadership of the working class being established at the culmination of the transition period.

The CPI does not believe, as the CPI (M) does, that it is absolutely essential to replace the present state headed by the big bourgeoisie with a people's democratic state led by the working class. This is evident in how the CPI sees parliamentary democracy as an instrument for effecting fundamental transformations in society. The Programme states:

> By developing a powerful mass revolutionary movement and broadening unity of all left and democratic forces, and by winning a stable majority in Parliament backed by such mass movements, the working class and its allies will strive their utmost to overcome the resistance of the forces of reaction and transform the parliament into a genuine instrument of the peoples will for effecting fundamental transformations in society. (para 9.4)

This implies that working within the state structure, it is possible to bring about fundamental transformations in society. The legacy of viewing the Indian state structure as containing some anti-imperialist, anti-monopoly, and anti-feudal potential, which was apparent in the 1964 Programme, continues to linger in the present formulation.

CLASS ANALYSIS

Some of the weaknesses in the strategy set out in the Programme stems from the incomplete and, at times, eclectic class analysis. It is very important that the Party Programme be based on a scientific

analysis of class relations in Indian society in order to identify who the exploiting classes are in economic and social terms and who the exploited classes and sections of the people are.

ABSENCE OF LANDLORDISM

In the section "Agrarian Relations Since Independence," many features of capitalist development in agriculture are noted. However, there is no analysis of the nature of landlordism; there is neither an analysis of how a powerful stratum of capitalist landlords and big capitalist farmers has emerged, nor is there any mention of the concentration of land and other forms of wealth that continues to exist in the hands of the landlords and other big capitalist farmers. The section talks about implementation of land reforms and the struggle for land, etc., without any mention of the strong hold of landlordism on land and other assets. The differentiation amongst the peasantry that has proceeded under capitalism is poorly delineated, without any mention of the role of different strata of the peasantry (such as poor, middle, and rich peasants), from which their role in the class struggle in the countryside can be inferred or understood.

In fact, a paragraph on the various sections of the peasantry brings out the weakness of the analysis of rural classes.

> The big farmers lobby took an ambiguous stance towards the new policy. Initially, they perceived trade liberalisation and entry of agribusiness as programmes advantageous to them. Later they have begun to oppose free trade and demand protection of their economic space through state intervention.
>
> The medium and small farmers generally follow the lead provided by the big farmers in the hope that the returns will be high.
>
> As for the small and marginal farmers, they have increasingly got dispossessed of their land and other resource bases. (para 6.6)

Are the "big farmers" here landlords or capitalist farmers or rich peasants? The "medium and small farmers" may be middle peasants or poor peasants.

This must be considered along with the role of the rural bourgeoisie and the capitalist landlords as stated in the section "Classes and Other Sections: Their Role":

> The rural bourgeoisie, the capitalist landlords, the rich peasants do not join the landless labour in their struggle for land reforms and distribution of land. But in certain other aspects, e. g., the struggle against high cost of inputs, infrastructural facilities, remunerative prices and measures to make agriculture viable, and on the question of opposing all attempts by the state to forcibly acquire and grab agricultural land, one can expect all of them to join together. (para 7.15)

From the above, it appears that the rural bourgeoisie, capitalist landlords and rich peasants are part of the agrarian struggle on a whole host of issues. But this is a misreading of the role of the rural bourgeoisie. In fact, the struggle of the landlords and rich peasants is to get a larger share of the state resources, whether it be subsidies, credit or infrastructure facilities. They mobilise other sections of the peasantry for this, but they will not become part of any struggle against the bourgeois-landlord order. In fact, they will be pitted against the democratic agrarian movement.

Completely missing is the fact that landlords are part of the ruling class that controls state power. Any analysis of the class exploitation by them of agricultural workers, the poor peasantry and the rural poor is totally absent. Without such a class analysis and approach, it is impossible to develop a powerful agrarian movement against state power and the ruling classes, or to build a worker-peasant alliance that is pitted against the bourgeois-landlord classes.

As far as the development of industrial and commercial capital is concerned, the analysis stresses only one aspect of the result of the neo-liberal economic reforms. It states that a strata of powerful corporates has emerged within the bourgeois class and that Indian corporate houses are entering into a number of partnership with the MNCs. The focus is on corporate capitalism.

The focus needs to be broadened to include all sections of big capital that constitute the big bourgeoisie. As pointed out earlier, this includes not only the big corporates but also various other forms of capital ownership and control over resources.

REGIONAL AND NON-BIG BOURGEOISIE

Another issue that is not sufficiently delineated and analysed is the position of the regional bourgeoisie. A bulk of this comes under the

non-big bourgeois category. There has been a change in the position of the regional bourgeoisie within the overall capitalist class structure and in respect of its relations with the big bourgeoisie. It is not enough to note the contradiction between the big bourgeoisie and smaller sections of the bourgeoisie. With liberalisation, the non-big bourgeoisie has also had opportunities to expand their capital and has become more integrated with the all-India big bourgeoisie. Through this process, some sections of the non-big regional bourgeoisie have entered the ranks of the big bourgeoisie while maintaining their main capital bases in their particular regions.

One of the aspects of the contradiction between the big bourgeoisie and the non-big bourgeoisie was the absence of durable links of the non-big bourgeoisie and foreign capital. After liberalisation, this changed. Sections of the non-big bourgeoisie have utilised the opportunities to collaborate with foreign capital and to benefit from it. All these have led to a muting of the contradiction between the big and non-big sections of the bourgeoisie.

The CPI Programme does not reflect any of these changes when it seeks to characterise the role of the regional parties. By and large, it sees the role of the regional parties in a positive light while noting some of these limitations. The document states:

> They represent and voice the urges and demands of vital sections of the people in the particular state/region. They also articulate the urge for empowerment of the people of that region . . . Not having a definite political outlook, these regional parties are willing to join hands with the Communists if the situation so demands.

Such a characterisation tends to include these parties in the Left and Democratic Front.

Though the updated Programme of the CPI (M) could not take on board the new changes that developed in the last two decades with regard to the regional bourgeoisie, subsequent Party resolutions have noted the changing role and position of the regional bourgeoisie and its resultant impact on the regional parties. Though the attitude to the regional parties fall in the domain of tactics, the changed class role of the regional bourgeoisie also has a strategic aspect, which must be noted.

DISCUSS PROGRAMMATIC ISSUES

To sum up, there is a significant change in the characterisation of the Indian state in the new CPI Programme, one that brings it closer to the CPI (M)'s understanding of the state. There are other aspects of the Programme that have correctly analysed the changes in capitalist development and its impact on the various classes. However, there are still shortcomings in the class analysis and in delineating the role of various classes. The leading role of the working class in the forging and carrying forward the democratic revolution and transition to socialism still remains unrecognised. There is, thus, a hangover of the old understanding that has a bearing on tactical lines adopted by the CPI from time to time. However, the fact that the CPI is examining all these issues further is encouraging. The 22nd Congress, which adopted the Programme, also constituted a Programme Commission headed by A. B. Bardhan to continue work on updating and refining the Programme. Despite the unfortunate death of Comrade Bardhan, we hope that this work will continue.

The CPI (M) and CPI are having regular discussions on current political developments and the tactics to be pursued. As part of the ongoing dialogue and coordination between the parties, it may be useful to have discussions on programmatic issues as well.

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Prabhat Patnaik

Nationalism, Hindutva and the Assault on Thought

Bourgeois nationalism invariably sees the "nation" as distinct from, and standing above, the people, who are required to make "sacrifices" for the "nation" but whose own conditions of life are not supposed to be relevant to the stature of the "nation". This is true of all phases of capitalism. The "nationalism" that came into vogue in Europe after the Westphalian peace treaties was associated with mercantile capital whose theoretical outlook, mercantilism, saw the wealth of a nation as consisting of the magnitude of gold and silver it possessed. European "nations" therefore vied with one another in spreading out all over the globe in an enormous imperial expansion aimed at augmenting the "nation's" wealth either directly through loot, plunder and the mining of gold overseas with slave labour, or indirectly through grabbing goods from colonies that could be exchanged for precious metals. But such augmentation of the wealth of "nations" was not supposed to, and did not, contribute to any improvement in the conditions of life of the people. On the contrary, as John Maynard Keynes argued, the inflow of Spanish gold into Europe resulted in inflation which, in countries like Britain and Holland, where money wages did not increase, led to a worsening of the conditions of the working population. In fact Keynes saw this lowering of real wages as

the reason for the subsequent development of industrial capitalism in these countries.

Adam Smith, the theorist of the bourgeois order that industrial capitalism was ushering in, and a staunch critic of mercantilism who defined the wealth of a "nation" not in terms of the gold and silver it possessed but in terms of its capital stock, and hence advocated the removal of all fetters on capital accumulation as the means of augmenting the wealth of a "nation", also did not see such augmentation as improving the standard of life of the working people. True, he believed that real wages in a nation *accumulating capital* would be higher than in one where the capital stock was stagnant; but the size of the stock *per se* did not affect real wages. And the same was true of David Ricardo, the other major theorist of the new order. "Nationalism" oriented towards augmenting the wealth of "nations" saw the "nation" as standing above the people, even in the era of industrial capitalism.

This concept of "nationalism" was even more clearly evident in the era of finance capital. Rudolf Hilferding, whose opus *Das Finanzkapital* was used extensively by Lenin, saw a glorification of the "national idea" as the ideology of finance capital. Financial oligarchies in different countries, each presiding over a coalescence of industrial and bank capital, were engaged in intense inter-imperialist rivalries and fought wars against one another, in which the workers of the warring countries were required to kill each other across the trenches, but there was never any suggestion, even for ideological propaganda purposes, that such wars were being fought for improving the conditions of life of the workers.

"Nationalism" no doubt has somewhat receded "officially" in the advanced capitalist countries in the recent period, but this has to do with the fact that finance capital itself has become "globalized" and international. This receding however does not negate the fact that bourgeois nationalism in all phases of capitalism has apotheosized the "nation" as standing above the people. Since its interest is not perceived to coincide with the interest of the working people, by implication it is seen as being co-terminus with the interest of capital.

The "nationalism" that developed in countries like India in the course of their anti-colonial struggle was altogether different. Since the theoretical basis of the anti-colonial struggle was derived from the

phenomena of "drain" and "deindustrialization" which had impinged on the *people*, and since the intensification of the anti-colonial struggle occurred in the 1930s when the peasantry suffered acute distress (which in turn affected the agricultural labourers as well), owing to the disastrous fall in prices and the terms of trade of their products as a result of the Great Depression, the "nationalism" associated with this struggle necessarily envisaged an improvement in the living conditions of the people. The "nation" in short was not seen as a separate entity standing above the people, but an entity whose interest lay in an improvement in the conditions of the people. Instead of an "aggrandizing" bourgeois nationalism, this nationalism had to be inclusive, encompassing the widest segments of the people, and engaged in developing solidarity with other struggling people in the world rather than seeking hegemony over them. And since any effort to encompass the widest segments of the people must be based on a promise of what the new "nation" would look like, it had to advance a programme, a "social contract" on the basis of which people could unite.

The Karachi Congress resolution of 1931 was in the nature of such a "social contract", and together with the promise of land reforms that the Congress campaign for the 1937 elections put forward, had a decisive impact on the outcome of those elections. The Karachi Resolution put forward a programme that included, among others, universal adult suffrage; equality before law irrespective of gender, caste, ethnic and class differences; a separation of the State from religion; a set of fundamental rights; a minimum standard of life for every Indian; free and compulsory primary education; and abolition of the death penalty. Programmes like the Karachi Resolution in India also came up in the course of struggles by other oppressed people of the third world, a notable example being the Freedom Charter of South Africa.

The question obviously arises: if bourgeois nationalism is of the "aggrandizing" variety which puts forward the metaphysical concept of a "nation" standing above the people, then how do we explain the very different conceptual nature of anti-colonial nationalism *in class terms*? The answer lies in the fact that even though in India the bourgeoisie was in the position of leadership of the anti-colonial struggle, the struggle itself was not a *bourgeois struggle* but a multi-

class struggle, which included within its ambit the workers and peasants, and over which the bourgeoisie could not assert its own specific agenda.

To be sure, the bourgeoisie's being a part of the multi-class anti-colonial struggle and even playing a leadership role in it, entailed that on many occasions elements of an aggrandizing bourgeois nationalism also crept into the inclusive nationalism we have been talking about, which is why one must not idealize the political practice carried out in the name of such nationalism. Besides, this inclusive nationalism associated with the anti-colonial struggle would in any case get undermined by the process of capitalist development that has occurred in the country after independence, but this fact, discussed below, does not affect the *conceptual difference* between the two kinds of nationalism.

II

In the period after independence while the political part of the agenda, such as universal adult suffrage, formal equality before law, separation of the State from religion (at least in the sense of the State having no religion), and a set of fundamental rights, was fulfilled by being enshrined in the Constitution, there was serious reneging in other spheres, the most significant instance of which related to land reforms. No doubt some very large landlords, and those landlords unwilling to turn towards capitalist farming had to give up their land, which was distributed among the richer segment of the peasantry, but land concentration as such was not broken. Put differently, the proportion of land owned by, say, the top 15 percent of owners did not decline; what happened was some change in the composition of this top 15 percent. And this change facilitated a tendency towards the development of capitalism in Indian agriculture, consisting of an admixture of both landlord and peasant capitalism.

The fact that capitalism with its inherently inequalizing tendency would undermine the political equality promised by the concept of "citizenship" enshrined in the Constitution, was scarcely in doubt; and the possibility of such undermining was even drawn attention to by Ambedkar in his closing remarks to the Constituent Assembly. But it came to be believed by the political leadership that under the *dirigiste*

economic *regime* that was erected after independence, the controls and regulations imposed on private capital would enable the country to get the best of both worlds: to enlist the support of the private sector for economic development, even while keeping within limits the inequality engendered by such a move.

This of course was unrealistic and the growing inequality in income and wealth was already serious enough for Nehru to set up the Mahalanobis Committee in 1960 to investigate the matter. In any case, however, even such restraints as had been placed on the growth of inequality during the *dirigiste regime* were removed with the pursuit of neo-liberal policies after 1991. The shift to a neo-liberal economic regime meant that the "spontaneous tendencies" of capitalism, including the tendency towards primitive accumulation of capital at the expense of petty producers and peasant agriculture, and towards rampant commoditization of every sphere (involving *inter alia* the privatization of services like education and health) were allowed full play; they were no longer subject to any restraint, no matter how inadequate the earlier restraint might have been.

The pursuit of neo-liberalism already entailed a shift, even in official pronouncements, from the inclusive nationalism which had till then been subscribed to, towards a bourgeois nationalism of the conventional aggrandizing kind. The very apotheosis of GDP growth, irrespective of what was happening to the conditions of life of the working population, a dichotomy reminiscent of both mercantilism and classical political economy, was an indicator of this. But there was also a common refrain about India becoming an "economic superpower", and almost every problem began to be seen with reference to this goal. Indeed a senior cabinet minister of the UPA once even stated that "corruption" had to be fought because it prevented India from becoming an "economic superpower"!

While the emergence of bourgeois nationalism from the inclusive nationalism of the anti-colonial era, breaking through the crust of the latter as it were, as the big bourgeoisie became increasingly globalized and the hiatus between it and the other classes widened dramatically through a rupture of the anti-imperialist bloc, is understandable, the question will arise: why should there at all be *any* emergence of bourgeois nationalism when the bourgeoisie itself is becoming globalized? If the bourgeoisie's going beyond nationalism appears to

be the hallmark of advanced capitalist countries in the era of globalized capital, why should there be an exaggerated emphasis on aggrandizing bourgeois nationalism at the same time in a country like ours? This after all is what we are seeing today being championed by the *Hindutva* forces, who place the "nation" as some metaphysical concept above the people. Why should any scope for it arise, not *in opposition to* globalization *but within the agenda of the very forces supporting globalization*?

The answer lies in the difference between the situations of the advanced capitalist countries and of countries like India. This difference arises for at least three reasons: first, the relative size of the labour reserves here (using the term to include open unemployment, casual employment, intermittent employment, underemployment, and disguised unemployment) is, to start with, much greater than in the advanced countries, because of which the tension between having democratic institutions based on universal adult suffrage on the one hand and the continued exclusion of vast masses of the people who remain trapped in abysmal living conditions, is much greater. Secondly, when high growth occurs, the fact that it does not generate adequate employment to create any tightness in the labour market and thereby improve the bargaining strength of the workers, implies that the share of surplus in output increases rapidly and inequalities get sharply accentuated. This occurs to a far greater extent in countries like India than in the advanced capitalist countries because the latter have not seen such high growth. Thirdly, the operation of neo-liberalism has a far more profound impact in countries like India, by imposing primary accumulation of capital on the vast mass of petty producers, both in flow terms (by squeezing their incomes) and in stock terms (by dispossessing them of their assets "for a song").

Because of this difference between the two situations, political support for a neo-liberal regime within a framework of democratic institutions is threatened in countries like India to a far greater extent than in the advanced capitalist countries (though there too the threat exists and gets exacerbated in a crisis like the present one). Neo-liberalism however has its own "spontaneous" ways of coping with this problem. One obvious way is the following.

Since the adoption of policies disliked by international finance capital threatens the economy with capital flight as long as it remains trapped within the vortex of globalized financial flows, most political

formations, lacking the will to de-link from globalized financial flows which is an integral part of the process of globalization, continue with more or less the same policies, viz. the ones demanded by globalized capital. In other words, even if one political formation gets voted out and another gets voted in, the economic policies remain more or less the same. This tendency is further buttressed by the fact that the financial bureaucracy, typically recruited from the World Bank, the IMF and other such institutions, also remains unchanged even when the government changes.

But this way of insulating neo-liberalism from democratic politics, which amounts in effect to a curbing of democratic politics, may not always suffice. The corporate-financial oligarchy therefore seeks other, additional, ways of ensuring that the country's thralldom to neo-liberal capitalism continues and does not get jeopardized by any democratic assertion by the people.

The need for these other ways becomes particularly strong when the neo-liberal regime faces an economic crisis, as it is doing now under the impact of the world capitalist crisis. Here we should remember an important asymmetry: economic inequalities which widen during the high-growth period do not come down in the period of crisis. Likewise, while primary accumulation of capital at the expense of petty producers occurs in a period of high growth, it does not get reversed in a period of crisis; on the contrary it gets even further accentuated. Similarly, if employment does not expand during the high growth period, thereby causing an increase in the relative size of the labour reserves, this fact, far from getting reversed, becomes even more acute during the crisis; and what is more, even the urban upper middle class which had been a votary of neo-liberalism, because of being a beneficiary from it, begins to get disillusioned and restive when the employment opportunities even in sectors like IT-related services begin to shrink in the crisis.

The enlisting of the support of the communal forces which generate divisions among the people, which mobilize people on the basis of communal propaganda *but carry on the neo-liberal agenda*, becomes important for the corporate-financial oligarchy *especially in the period of crisis*. A corporate-communal alliance comes into being, and it vigorously propagates an ideology of aggrandizing nationalism, an ideology that puts the "nation" as a metaphysical entity above the people, demanding "sacrifices" from them, *including of their*

democratic rights, in the name of the "nation". (When Arun Jaitley says that "freedom of expression cannot be at the expense of the nation", he is doing precisely this: he is demanding in effect that people should "sacrifice" their freedom of expression, which is their fundamental right, for the sake of this metaphysical concept of a "nation").

Such an ideology of aggrandizing nationalism is obviously in the interests of the corporate-financial oligarchy. Since this metaphysical concept of a "nation" is supposed to be served by having a high GDP growth rate, for which it is taken for granted that boosting the "state of confidence" of the corporate capitalists, both domestic and foreign, is essential, it follows that "nationalism" itself demands concessions for corporate capital. This logic entails in other words that to make the "nation" stronger, the capitalists must be made richer (which after all is what the "Make in India" campaign is suggesting). The corporate-financial oligarchy thus turns the tables on its potential opponents very neatly: instead of being threatened by democratic institutions in a period of crisis, it actually legitimizes its hegemony, obtains still greater concessions, and even demands "sacrifices" of people's democratic rights, *in the name of the "nation".*

Such a notion of "nationalism" is also in the interests of the communal elements, the *Hindutva* forces. Their entire agenda after all is centered around the concept of a *Hindu Rashtra.* But, Hinduism, unlike the semitic religions, has neither a "book" nor a "church"; indeed according to historian Romila Thapar, foreign accounts used to refer till not long ago to the "Hindu group of religions". The *Hindu Rashtra* therefore means not just a theocratic State but an authoritarian State where a small and arbitrarily-chosen coterie determines State policy. The inclusive nationalism of the anti-colonial struggle therefore is anathema for the *Hindutva* forces, because of which it is not at all surprising that *they had nothing to do with the anti-colonial struggle.* Rolling back such inclusive nationalism, and propagating an aggrandizing metaphysical nationalism that puts the "nation" above the people and therefore the coterie that speaks in the name of the "nation" above democratic institutions, is thus an integral part of their agenda.

There is a further point here. The caste-system, as historian Suvira Jaiswal has argued, is central to *institutionalized* Hinduism, and hence to the Hindutva agenda. The inclusive nationalism with its egalitarian thrust was associated with a remarkable change in the country's socio-

political life, so remarkable indeed that it would be no exaggeration to call it "India's long revolution". The fact that those who endured millennia of institutionalized inequality and caste oppression are now Constitutionally-ordained to be equal citizens of the republic, is no small matter. Likewise the fact that a region like Kerala which had witnessed not just "untouchability" but even "unseability" at the beginning of the twentieth century, is now applauded across the world for its Human Development indices, which necessarily presuppose a degree of egalitarianism, is no small matter.

The *Hindutva* forces stand for a "counter-revolution" against this "Long Revolution". Rolling back inclusive nationalism, negating the democratic vision of a "fraternity of equal citizens", re-fashioning the world in a manner that brings back the old hierarchies, constitute their objective. Propagating an aggrandizing nationalism suits their purpose.

In short both the corporate and the communal elements have a joint interest in promoting in a virulent manner an aggrandizing nationalism that privileges the "nation" over the "people". The "nationalism" that is being propagated by the NDA government is not the inclusive nationalism of the anti-colonial struggle (though it duplicitously lays claim to the prestige of the latter in the minds of the people by pretending to be synonymous with it); on the contrary it represents a negation of this inclusive nationalism. It constitutes an ideological weapon in the hands of the corporate-communal alliance to insulate the neo-liberal regime, and hence the hegemony of the corporate-financial oligarchy, against any challenge that democratic institutions may throw up, by enfeebling these institutions themselves. The virulent propagation of this "nationalism" is associated with a shift occurring in the nature of the State, whereby the neo-liberal state is consolidating itself by turning authoritarian, not by declaring an "Emergency" or mobilizing troops etc., but by mobilizing a bunch of communal and fascistic storm-troopers.

III

The propagation of this ideology of aggrandizing nationalism, where the "nation" stands above the people, where what constitutes "national" is defined by a small coterie of *Hindutva* elements around the ruling Party, and where, as a natural extension, criticism of the

ruling government comes to be characterized as "anti-national", requires that thought should be substituted by "pebbles" in the minds precisely of those who are seriously engaged in intellectual practice. This requires an assault on thought, and that too precisely in those institutions, which would necessarily be the front-ranking institutions of the country, where intellectual activity thrives.

An assault on thought has been going on for some time anyway under the neo-liberal dispensation through the process of commoditization of education. In institutions where education is sold as a commodity, those buying education use it as an input that goes into the production of themselves as a commodity. And since a commodity is not a use-value for the seller, but represents pure exchange value, i.e. command over a certain sum of money, the concerns of those buying education centre around how much money it would enable them to get on the market when they themselves appear as commodities. In this commoditized world, education that comes in the form of a capsule, a neatly-packaged product, is prized, while any education that seeks to raise questions, that stimulates its recipients to think, is frowned upon. Commoditization of education is thus destructive of thought anyway.

But in public educational institutions where this destructive impact of commoditization has not yet been felt, intellectual practice still includes thinking. And this is particularly the case since in these institutions, students from socially and economically excluded groups still enroll in large numbers because of the policy of affirmative action and also because of the manageable fees charged. The tendency on their part to raise basic issues of exclusion, oppression and exploitation is much stronger than among those who come from more privileged backgrounds (though the existence of the former group also raises the social sensitivity of the latter in these institutions). Several public educational institutions therefore have emerged as leading centres of thought, spaces for intense intellectual and political activism on the part of the students, and sites for the expression of creativity and originality. The assault on thought launched by the *Hindutva* elements targets these very sites.

The fact that some of the finest institutions of the country, like Jawaharlal Nehru University, University of Hyderabad, Pune Film Institute, and the Fine Arts department of M.S. University, Baroda,

are being systematically attacked by the *Hindutva* elements is no accident. It illustrates these elements' hostility to thought, which they perceive as standing in the way of their project of attenuating democracy in the name of an aggrandizing nationalism.

These elements would have no problems with these institutions if they simply churned out, as numerous private education-selling institutions do, non-thinking and socially-insensitive individuals who are exclusively concerned with becoming commodities. Indeed they demand it implicitly when they say that students should just "study" and not engage in "politics". (Several Union cabinet Ministers have actually voiced this demand). But politics basically involves presenting before society alternative views about itself. Since students constitute the segment of society that is most intensely engaged in thinking, and hence in holding, presenting and debating alternative views of society, to demand that they should not engage in politics, amounts in effect to saying that they should abjure thinking. Their "study" in other words should be devoid of thinking; it should consist rather in what those who are in the process of transforming themselves into commodities are engaged in doing, namely, imbibing capsules called "knowledge" during the teaching hours, and regurgitating them during examinations, or at the most acquiring some *skills* while eschewing all *thought*.

The attack on the premier academic institutions of the country to ensure that they are no longer sites where thought is practiced, proceeds according to a certain script. First of all, RSS-loyalists with no claim to distinction in any of the disciplines studied in the institution in question, are appointed to head the institution, their sole "mandate" being to rid the institution of "anti-national", i.e. thinking, elements. (The most brazen example of this is the Pune Film Institute, where students even went on a prolonged strike to oppose the appointment of a Director who knew little about films). Second, the Akhil Bharatiya Vidyarthi Parishad, the student wing of the RSS, which earlier used to operate more or less like other student organizations, but with a Right-wing outlook, is now converted into a *vigilante* group, reporting so-called "anti-national" activities on the campuses to these RSS-appointed "authorities". Third, the students accused of such activities are then made to face disciplinary action, and in certain instances like in Jawaharlal Nehru University, even

charged with "sedition" under an old colonial law (in complete defiance of Supreme Court guidelines on what may constitute "sedition"); they are put in jail in such "sedition" cases for varying periods and, even when granted bail, face both court-room trial as well as disciplinary action by the institution "authorities". Fourth, corporate media channels play up this "anti-nationalism" to defame teachers and students of these institutions. Fifth, fascistic mobs, supposedly "incensed" by all this "anti-nationalism", are unleashed on the students of these institutions, threatening to lynch them.

The objective of this entire project is to thrust down the throats of the students the *weltanschauung* of the *Hindutva* elements (which also suits corporate capital), by terrorizing and punishing all those who oppose it, i.e. all those who persist with the practice of thought. "Anti-nationalism" is identified with non-conformism to this *weltanschauung*, a claim amply borne out by the Human Resource Development Minister's pointing to the celebration of Mahishasur by some sections of JNU as proof of its harbouring "anti-national" elements!

Such an assault on thought is extremely dangerous for a number of reasons. First, since no society can exist without thought, any society that abjures thought becomes in effect parasitical on others for its ideas. It asks in effect to be intellectually hegemonized by other societies, notably by the advanced capitalist societies. The capsules called "knowledge" which the students are being exhorted to imbibe when they are asked merely to "study" and to shun "politics", are necessarily those manufactured abroad in the advanced capitalist countries.

Intellectual hegemony however is the precursor to other forms of hegemony, just as the struggle against intellectual hegemony is a condition for the struggle against other forms of hegemony. The current assault on thought therefore clears the ground for the country's being hegemonized by advanced capitalist countries, not just intellectually but in other spheres too.

It is ironical that this assault on thought which threatens to undermine the independence of the nation is being justified in the name of "nationalism", but this should come as no surprise. This aggrandizing "nationalism" after all has the backing, as we have seen, of the corporate-financial oligarchy, which is integrated with international finance capital and hence complicit with imperialism in opposing any threat to such capital.

Secondly, and quite obviously, the assault on thought not only undermines anti-imperialism, not only promotes parasitism on ideas borrowed from imperialism, but also helps to thwart all progressive social change. Karl Marx had once famously said that while bees could create structures that would put many an architect to shame, the difference between the worst architect and the bee consisted in the fact that the architect first created the structure in the mind before creating it in reality. The same is true of any progressive social change, which requires first of all a conceptual transcendence of the given situation, the creation in the mind of an alternative, more humane, society which is then sought to be translated into reality. The assault on thought prevents any such conceptual transcendence.

But those who derive satisfaction from this fact, and hence are launching the assault in the hope of achieving such a *denouement* are living in a fool's paradise. Putting the clock back on whatever social and political change we have had in this country, essaying a social counter-revolution, employing terror against anyone who dreams of a better society, using sedition laws against those who speak of social injustice, all these cannot in any sense lead to a social equilibrium, to a state of rest where society will finally settle down.

If progressive social change of a thought-out and productive kind is thwarted by such measures, then resistance against the existing iniquitous order will take all kinds of unproductive, and violent forms. These in turn would be used by the ruling Party to justify further encroachments on freedom of expression, further assaults on thought, further repression by the State machinery and by fascistic groups, and further diminution of democracy. A dangerous dialectic, with no end in sight and no progressive potential, would then ensue, which would only make India join the ranks of the so-called "failed States" that dot the third world landscape. Extricating the country from that dialectic by opposing the Hindutva elements' assault on thought and on democratic institutions in the name of an aggrandizing "nationalism", becomes essential.

Students in major public institutions across the country are rising against these elements. But there are obvious limits to what student activism alone can achieve. The political Left has to take the lead in fighting back the *Hindutva* assault. In doing so however it will have to mobilize large segments of the people: the progressive and liberal intelligentsia that is opposed to the assault on thought; the numerous

social groups and civil society organizations that are opposed to the throttling of freedom of expression and to the unleashing of a "social counter-revolution"; and political parties that are willing to stand in defence of democratic institutions.

The Left, obviously, cannot insist that all the forces it mobilizes against the assault on thought, against the intellectual and social retrogression being unleashed by the *Hindutva* elements in the name of "nationalism", should subscribe to a Left agenda. Doing so will weaken the struggle against the hegemony of the *Hindutva* elements, which will be a tragedy for the people of the country, and hence for the Left itself. As the most *consistent* force in the defence of democracy and an anti-imperialist, inclusive, nationalism, the Left owes it to the people of the country to bring together all the forces that can be marshalled in this struggle against the *Hindutva* assault.

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K.K. THECKEDATH

Dialectical Materialism and the Question of Black Holes

To the question "*Does dialectical materialism need a defence?*" the answer is an emphatic yes. This is because of the ongoing class struggle all over the world. Let me explain.

Com E.M.S.Namboodiripad used to say that in order to understand dialectics well and the role of Marx and Engels in the formulation of this philosophy it was necessary to go to the earliest writings of these revolutionaries. Three important books had been published in the years 1843-45: *The Conditions of the Working Class in England* by Engels, *Hegel's Philosophy of Right* by Marx, and *The Holy Family* by Marx and Engels.

Even before their partnership, their outlooks had coincided on the major questions of philosophy and revolution. Engels had discovered the key role of the working class, not merely as an object of pity, but as a potential leader of revolutionary changes. Marx had discovered the role of private property as the key to understand the exploitation of the workers, and the role of consciousness or philosophy in the task of liberation. He highlights the need for philosophy for the working class, the *need for the exploiters to destroy philosophy*, and the consequent need for the defence of philosophy by the working class.

The following important proposition appears in this book: "As philosophy finds its *material* weapon in the proletariat, so the proletariat finds its *spiritual* weapon in philosophy."

This means that the class basis of philosophy was already clarified. The new philosophy of dialectical materialism would surely be the world outlook of the working class. The exploiters needed to hide the fact of exploitation, whereas the working class had nothing to hide. Its philosophy would be the true philosophy, which depicted the world just as it was.

HOLY FAMILY

Marx and Engels were scientists working with an open mind. The philosopher Descartes is often portrayed as a dualist philosopher, and so having nothing to do with materialism. But in the *Holy Family* Marx and Engels write: "We shall merely say the following: Descartes in his *physics* endowed *matter* with self-creative power and conceived *mechanical motion* as the manifestation of its life. He completely separated his physics from his metaphysics. *Within* his physics, *matter* is the sole *substance,* the sole basis of being and of knowledge." Here is deposited the seed of dialectics, the refutation of dualism, and the endowing of matter with the capacity of evolving consciousness and *knowledge.*

Com E.M.S. emphasized that the early writings of Marx and Engels were important because here we see deposited the key ideas of dialectical materialism in the process of their formation. The class nature of philosophy having been exposed by Marx in Hegel's *Philosophy of Right*, he emphasized the need for philosophy for the working class. Such a philosophy is required for bringing about the change that needs to be brought about by the working class. This is stressed in the spring 1845 *Theses on Feuerbach* by Marx: "The philosophers have only interpreted the world in various ways; the point is to change it".

A basic principle of cognition is also deposited as a gem in Marx's statement: "The chief defect of all previous materialism (that of Feuerbach included) is that things (Gegenstand) reality, sensuousness, are conceived only in the form of the object, or of contemplation, but not as sensuous human activity, practice, not subjectively... The

question whether objective truth can be attributed to human thinking is not a question of theory but is a practical question. Man must prove the truth, i.e. the reality and power, the this-worldliness of his thinking, in practice. The dispute over the reality or non-reality of thinking which is isolated from practice is a purely scholastic question".

Practice is the test of truth or knowledge. The test of knowledge of objective reality cannot be identified with any of the so called criteria, such as, of predictability, and so on. Social practice is the test of knowledge. Thus the process of acquiring knowledge is an ongoing exercise. So also is the process of the development of the working class philosophy. The working class has no need for a philosophy which stands above the world and is not tested in practice.

In essence, dialectical materialism holds that the world develops in accordance with the laws of movement of matter and stands in no need of a "universal spirit". This position is summed up in the following words of Engels: "*The materialistic outlook on nature means no more than simply conceiving nature just as it exists, without any foreign admixture.*" A working summary of the principles of dialectical materialism has been given in my earlier article '*In Defence of Dialectical Materialism*' in *Marxist* XXX 2 (April-June 2014).

Engels describes what is required of a philosophy of the working class, which needs to understand the reality of exploitation and the need to change the world. It has to expose the falsity of all foreign admixture, such as, of gods, ghosts and spirits, with which the working class is held in thralldom.

OTHER PHILOSOPHIES

The very opposite is the demand of the ruling classes who, through their philosophies, wish to hide the reality of exploitation. They should like a world view in which the development of the world is not in accordance to the laws of the movement of matter. They would like to step out of all laws and bring in their inverted world view with a "foreign admixture", or a Hand that set the clock moving. This is the objective need of the exploiters which is expressed in their philosophies.

This is not the place to comment on philosophies other than dialectical materialism. It is not our intention to brush aside all such

philosophies as having no roots, or being of no consequence. As Lenin had pointed out in a much quoted paragraph from his work *On the Question of Dialectics* (Collected Works Volume 38), "Philosophical idealism is only nonsense from the standpoint of crude, simple, metaphysical materialism. From the standpoint of dialectical materialism, on the other hand, philosophical idealism is a one-sided, exaggerated development of one of the features, aspects, facets of knowledge, into an absolute, divorced from matter, from nature, apotheosized. Idealism is clerical obscurantism. True. But philosophical idealism is ("more correctly" and "in addition") a road to clerical obscurantism through one of the shades of the infinitely complex knowledge (dialectical) of man."

This may be mistaken as Lenin's being charitable to philosophical idealism. But the truth is far from this. For, in the very next paragraph, which also happens to be the closing paragraph of the piece, he makes it clear that, while philosophical idealism has epistemological roots, in reality, *it is a sterile flower*. The following words from this paragraph are very clear: "Rectilinearity and one-sidedness, woodenness and petrification, subjectivism and subjective blindness – voila the epistemological roots of idealism. And clerical obscurantism (=philosophical idealism), of course has epistemological roots, it is not groundless; it is a sterile flower undoubtedly, but a sterile flower that grows on the living tree of living, fertile, genuine, powerful, objective, absolute human knowledge."

In the working class's ideological requirements, such sterile flowers are not going to be useful. Take the example of *the philosophy of scientific realism* which states that "among the limitless set of truths, there are some that we know now, some that we don't know now and will find out later and some that may lie beyond the furtherest reach of our knowledge seeking powers...".A position such as this about truths, which lie beyond the furtherest reach of our knowledge seeking powers, will open the way for the introduction of foreign admixtures in our attempts to understand nature.

Indeed, anything that comes in the way of understanding nature just as it is, without any foreign admixture, needs to be fought and eliminated. The class struggle in the world is fought not merely in the daily lives of trade unions struggles, or street struggles with the oppressive governments, but also on the level of ideology. Every effort

is made by the ruling classes to make the ideology of the working class appear as irrelevant and false.

The development of the natural sciences shows that they are not neutral towards philosophy, but that they are a scene of struggle between two world outlooks. We see that the achievements of natural science quite often serve as the point of departure for diametrically opposed philosophical conclusions by the ideologists of hostile classes. *This is where the working class has to rise continually in defence of the materialist positions.*

The developments in science, particularly in physics, in the early years of the twentieth century were used by the ruling classes to support Mach's empirio-criticism (the early form of positivism).This was why Lenin came out with his book in defence of materialism: *Materialism and Empiriocriticism*. And in the process of defending materialism against the distortions of the discoveries of science, Lenin further enriched dialectical materialism. For example, he explained the infinite depth of nature in its motion: "The electron is as inexhaustible as the atom, nature is infinite but it infinitely exists". It must be remembered that the task of defending dialectical materialism is also linked with the deepening of this philosophy. As Engels said: "...To me there could be no question of building the laws of dialectics into nature, but of discovering them in it and *evolving* them from it."(Emphasis added). The task of defending dialectical materialism remains a primary responsibility of the working class as long as the class struggle continues.

II

THE THEORY OF RELATIVITY AND BLACK HOLES

We have seen in our earlier article how philosophical idealism in the form of positivism influenced many leading scientists during the construction of quantum theory. The quantum theory in its Copenhagen interpretation, on the basis of what was called the uncertainty principle, ruled out any causal laws at the level of quantum phenomena. In this version of quantum theory, it is *in principle not possible to understand the motion* of an elementary particle like the electron, or the breaking up of a radium atom, by looking for underlying causes. This was the philosophical position that the

bourgeoisie was ready to support. It was welcomed by the leaders of Western science.

Thus we have the physicist Walter Heitler, who contributes an essay in *Albert Einstein Philosopher Scientist* (Ed.P.A.Schlipp), declare with a sigh of relief: "But what is clear is that the new situation, with which we are confronted in quantum mechanics, has created room for an approach to the problems of life, (and other domains of human thought) which is chained not to the deterministic views of classical physics". What Heitler was looking for was a science which left room for faith.

A very similar situation is to be found in the development of Einstein's great theories, the special theory of relativity (1905) and the general theory of relativity (1915). The general theory of relativity was utilized to propagate various kinds of idealistic and creationist views of the world, e.g., the so called big bang theory which propagates that the world was formed about 15,000 million years ago.

One of the offshoots of this theory is the proposition of the existence of objects, called the *black holes*, as final stages in the development of certain types of stars. Such astronomical objects defy the principles of dialectical materialism, such as about the knowability of the world or of the existence of contradictory processes within such objects. If the black holes, as posited by the general theory of relativity, exist with the above properties, then it means that dialectical materialism does not hold, and will have to be discarded. Hence the question of black holes is of great importance. Here is a case where the question of defence of dialectical materialism is posed before the working class.

THE SPECIAL THEORY OF RELATIVITY (SRT)

Let us begin by briefly considering the special theory of relativity on which the general theory of relativity stands. First let us consider how even in the first decade of the twentieth century the special theory of relativity was distorted in its presentation to suit the needs of philosophical idealism.

Lenin was especially interested in the theory of relativity as can be discerned from his detailed notings on the velocity of light in the1915 copy he made of a technical book (see *Collected Works* Vol. 38, p. 335).

He was aware of how the SRT was being used in building support for all forms of religion. He writes: "One has only to recall the vast majority of the fashionable philosophical trends that arise so frequently in European countries, beginning with those connected with the discovery of radium and ending with those which are now seeking to clutch at the skirts of Einstein, to gain an idea of the connection between the class interests and the class position of the bourgeoisie and its support of all forms of religion on the one hand, and the ideological content of the fashionable philosophical trends on the other"(*On the Significance of Militant Materialism*).

Lenin clarifies that Einstein himself was not responsible for this situation. Referring to an article on Einstein's theory of relativity by Timiryazev, Lenin says that "Einstein... is himself not making any active attack on the foundations of materialism". But his theory "has already been seized upon by a vast number of bourgeois intellectuals of all countries; it should be noted that this applies not only to Einstein, but to a number, if not to the majority, of the great reformers of natural science since the end of the nineteenth century".

We shall not go deeply into the theory itself, but shall examine some of the distortions that have been introduced in the various concepts relating to physics. For details of the STR one may refer to my book *Dialectics, Relativity and Quantum,* National Book Agency, Kolkata (*DRQ*).

The special theory of relativity has its roots in the contradictions that arose between two theories of physics, namely, the mechanics of Galileo and Newton, on the one side, and the electromagnetic theory of Faraday and Maxwell, on the other side.

Techniques in physics had improved to such an extent by the end of the nineteenth century that the velocity of light could be measured very accurately, and could be compared with what was predicted by Newtonian mechanics. It was discovered that there was a contradiction between what was expected, if Newton's theory was right, and what was observed while measuring the velocity of light.

According to mechanics, the velocity of an object would depend on the velocity of the observer. Since light was a form of motion, its velocity was expected to be different under different conditions of the motion of the observer, say, the observer on the earth would expect the velocity of light to depend on the earth's own motion with respect to

the sun; also velocities in different directions could also be expected to show small variations. But detailed experiments with light, running over the last two decades of the nineteenth century, failed to find any such variations. The velocity of light, the fastest form of propagation, showed this strange property, namely, *that its velocity did not depend on the state of motion either of the emitting body or the observer.* This unique feature of the constancy of the velocity of light caused much worry and puzzlement to scientists of the end of the nineteenth century. This special velocity, of about 300,000 kilometers per second, is denoted in physics by the symbol *c*.

To set this situation right, what Einstein did was to resolve the contradiction by reconsidering our definitions of time measurement and the simultaneity of two distant events.

WHAT IS AN EVENT?

An event is an abstraction that we make when we deal with some processes like the burst of a small cracker, which take place in a short duration of time and in a small region of space. Suppose someone tells us that yesterday an aeroplane burst into flames mid-air. We would want to know when and where it happened. We would get the answer 10 a.m. at a place for which the latitude and longitude are given along with the altitude at which the plane burst. Thus the event of the bursting of the aeroplane is described by three numbers giving the location, and one number which gives the time. While we speak of the event we have ignored all the details like the length of the plane, the time it took to burn out, as well as all other details. This is what we mean by saying that an event is an abstraction. It is described by three numbers giving the space and one number giving us the time of occurrence. Such numbers are called the coordinates of the event.

Einstein examined the question of how one determines whether two distant events are simultaneous or not. This is done with the help of observation of the light emitted by the events which travel all the way from the two events and reach the observers. Einstein chose light as the signal, because it was the fastest signal possible to correlate two events. Through such an analysis, using the physical facts about the speed of light given with the utmost accuracy by experiments conducted over two decades, it was deduced that two distant events E

and F which were observed as simultaneous by one set of observers in one frame of reference S would not be simultaneous as observed by another set of observers if they were in a frame of reference S' which was in relative motion to S. In other words, the simultaneity of distant events was not absolute, but was relative to the frame of reference. If the two distant events E and F are simultaneous in one frame of reference, in another frame which is moving, E could be earlier or later than F, and there would be a time interval between the two events.

The implication is that the measurement of time that elapses between two events is not an absolute, but depends on the frame of reference in which the observation is made. Now, the frames of reference that Einstein was using here were non-accelerating frames, or what are called inertial frames. They were frames of reference like the compartment of a railway train moving with constant speed, or the stationmaster's office on the railway station.

If S and S' are inertial frames of reference, (moving with uniform velocity relative to each other), then not only are the time measurements *not the same* for both observers, but the spatial measurements are also relative. Einstein gave the formula for the relation between the space coordinates and time coordinates of a given event in the two frames of reference S and S'. These are the Lorentz formulae given in his first paper on relativity in 1905. Since these formulae allow us to calculate the new coordinates when we change from one frame of reference to another, they are called Lorentz *transformations*.

To derive these results Einstein used the principle of the constancy of the velocity of light, and another principle called the principle of relativity, which Galileo had originally stated, namely, that all inertial frames of reference are equivalent.

SPACE-TIME

It was shown by Minkowski in 1908 that even though, for the inertial frames S and S', the measurement of the time elapsed between two events E and F were different, and so were the distance measurement between E and F, it was possible to combine these measurements of time elapsed and spatial distance in such a way that one got the same result for both reference frames. This result for the given pair of events,

which is invariant for S and S' is called the "interval" between the two events.

This mathematical result was interpreted by Minkowski as a welding together of space and time into one space-time. He proclaimed that space by itself and time by itself have no separate independent existence, but it was only space-time which had physical meaning. An event in space-time was given by four numbers, the three numbers giving the spatial position and one number giving the time of occurrence of the event E. Space-time was thus described as four dimensional, and these numbers were the four coordinates of the event.

In the same paper, Minkowski worked on an idea originally of Henri Poincare which considered the Lorentz transformations as forming a group of rotations. When we are dealing with rotations, we are actually treating space and time in the same way as equals. Thereby the interlocking of space and time was complete. The spatial and temporal behavior of any object could be treated together.

This welding of space and time into one structure was a very powerful construct. The earlier equations in electromagnetic theory given by Maxwell in the nineteenth century could now be written concisely using the four dimensional language. For this the mathematical tool of four dimensional vectors and tensors is used. Einstein's later work on the phenomenon of gravitation, namely, the general theory of relativity, was based on this apparatus of a four dimensional space-time structure.

It must be stated here that, while space and time were welded into space-time on the basis of the *common features* of space measurements and time measurements, what was neglected was that in abstractly uniting space and time, the *essential difference* between space and time was ignored. What was being ignored in this process of unification was the existence of concrete differences which were being united in the new construct called space-time. This weakness was to show itself soon in the attacks on materialism from idealist philosophers. This situation should draw our attention to the need for the dialectical materialist principle of "*the ascendance from the abstract to the concrete*" as suggested by Marx. We consider one example below.

ATTACK ON MATERIALISM BY RUSSELL

Since our objective is to consider the general theory of relativity and the concept of the black holes, we shall not deal with the SRT in detail. However, it is necessary to refer to one important writer who took this concept of the relativity of time and the unification of space and time into one space-time to project an idealist view regarding the nature of the physical world. This was the Nobel Prize winner Bertrand Russell.

In his book *History of Western Philosophy* (1946) Russell states: "What is important to the philosopher in the theory of relativity is the substitution of space-time for space and time. Common sense thinks of the physical world as composed of "things" which persist through a certain period of time and move in space. Philosophy and physics developed the notion of "thing" into that of "material substance", and thought of substance as consisting of particles, each very small, and each persisting throughout all time. Einstein substituted events for particles; each event had to each other a relation called "interval", which could be analysed in various ways into a time element and a space element. The choice between these various ways was arbitrary, and no one of them was theoretically preferable to any other. Given two events A and B, in different regions, it might happen that according to one convention they were simultaneous, according to another A was earlier than B, and according to yet another B was earlier to A. No physical facts correspond to these different conventions.

"From all this it seems to follow that events, not particles, must be the stuff of physics. What has been thought of as a particle will have to be thought of as a series of events. The series of events that replaces a particle has certain important properties, and therefore demands our attention; but it has no more substantiality than any other series that we might abstractly single out. Thus "matter" is not part of the ultimate material of the world, but merely a convenient way of collecting events into bundles".

Here was a powerful attack on materialism. As Lenin had suggested in 1923, here was a bourgeois philosopher in 1946 clutching at the skirts of Einstein to attack materialism. The question is does not dialectical materialism need to be defended against such an onslaught? Can the ordinary worker, who slogs for fourteen hours

of the day to earn his bread, defend himself when, in the religious discourse that he attends, he is told that science had proved that the world is not real, but only made of bundles of events which can be collected in different ways? This is where all the defenders of the philosophy of the working class must come together and give a fitting defence.

DEFENCE OF DIALECTICS

One such scientist was the Marxist physicist and mathematician A.D.Alexandrov. (It may be remarked that he was a student of the Russian scientist V.A.Fock and a member of the communist party). He concentrated on the differences between space and time, which had been ignored by Minkowski in his programme of unification of space and time into space-time. He pointed out that Minkowski himself had stated that the space vector and the time vector were actually differently placed. Using the technical concept of the *light cone*, it was shown that the time vector was always within the light cone and the space vector was always outside the light cone. Alexandrov showed mathematically that the Lorentz transformation preserved this property of separating the space like vectors and the time like vectors. He further showed that taking the light cone as the fundamental concept one could derive time and space from matter in motion. (For details see *DRQ*.)

The meaning of Alexandrov's work is that it is matter in motion that is the fundamental reality. Moving matter or processes (events) are interlinked by various chains of other processes, for example, by causal chains. The light cone of a given event is the outer limit of the causal influence of the event. Using this material link between processes, space and time are to be defined.

Now let us look at Russell's argument. He speaks of two events A and B. He then says that according to one *convention* they may be simultaneous, according to another A was earlier than B and according to yet another B was earlier to A. Firstly, Russell is speaking about "conventions", when he should have been speaking of frames of reference. Now a frame of reference is a rigid material structure like the moving railway train, with its numerous passengers as observers, or the station-master's office along with his colleagues. So there is no

question of any convention between people. Everything here is objective, no subjective element is involved in the observations.

Bertrand Russell has deliberately chosen events like A and B, which are simultaneous in a certain frame of reference, "according to one convention". Presumably, he is dealing with distant events. Now, distant simultaneous events like A and B are outside any physical relations between themselves. This is because the fastest influence, e.g. a ray of light, would take some time to travel from either A to B or from B to A. He has chosen such unrelated events because *he knows well* that for all physically related events, where, for example, one event is the cause of the other, the theory of Einstein strictly preserves the priority in time.

In fact this is the crux of the work of Alexandrov. It is the physical relationship of cause and effect, or development, which is at the basis of the concept of time. As dialectical materialism states, time is abstracted from matter in motion. David Hume used to say that temporal priority was at the basis of concept of cause and effect. The teaching of relativity theory, contrarily, is that it is the physical reality of causal-effect which forms the basis of the concept of time.

Russell further argues that events, not particles, are the stuff of physics. We have already seen how the concept of an event is an abstraction from a physical process. The concept of a particle is also an abstraction of a small moving physical object. Russell is working with abstractions, replacing a moving physical object with a moving particle and then replacing the moving particle with a series of events. Then he declares that matter has disappeared into "bundles of events"! Engels speaks about abstraction and sensuous reality: "It is the old story. First of all one makes sensuous things into abstractions and then one wants to know through the senses, to see time and to smell space. The empiricist becomes so steeped in the habit of empirical experience, that he believes that he is still in the field of sensuous experience when he is operating with abstractions."

The above argument shows how idealist philosophy tries to present an important discovery of science in a way which opposes materialism. *The defence of materialism had to be done, in this case, by using the weapon of the 'dialectics of the abstract and the concrete' given by Marx.*

Einstein's special theory of relativity represents a revolutionary

break from Newtonian mechanics, and from the old ways of conceiving space and time: space as a huge receptacle in which all things exist and move, and time as a universal flow independent of nature and its infinite movement. The physical consequences of the SRT need not be described here, e.g., the relativity of time and space, the relation of mass with motion, (viz. the increase of mass of an object with its velocity of motion), and the equality of mass and energy given in the famous formula $E = m c^2$.

SRT CORRECTS NEWTONIAN MECHANICS

Even though the special theory of relativity represents a revolutionary break from Newtonian mechanics as far as ideas are concerned, in practical terms the corrections involved are negligible. The Lorentz transformations involve the velocity v of the frame of reference, but it is compared to the speed of light c, which is a huge quantity. Even the fastest speeds on earth, which our frames of reference, say a jet plane, can attain, are microscopic compared to c. The earth itself goes around the sun in its orbit at a speed of about 30 km per second. But this speed is only one-ten thousandth of the speed of light. Even with this dizzying speed, the corrections involved to the mechanics of Newton would only be one millionth of one percent! Hence the genius of Newton is not challenged by the accuracy of the results.

THE GENERAL THEORY OF RELATIVITY (GR)

The general theory of relativity is Einstein's theory of gravitation. Newton had discovered the law of gravitation, which says that all objects in the world attract each other. He further describes this force of attraction as dependent on the masses of the bodies directly and falling away as the distance between them is increased.

In the case of the earth and the moon, the earth attracts the moon, making it go round the earth, and the moon attracts the earth as an equal and opposite reaction, producing as one of the results the tides on the earth. Action and reaction are equal and opposite and occur simultaneously. This is an instance of simultaneous action at a distance.

Einstein pondered over this situation of action at a distance, which

Newton's theory of gravitation involved. The special theory of relativity had shown that such simultaneous action at a distance was not permitted since different inertial frames would not agree with this concept. Newton's theory had to be recast. Einstein tried to remodel Newton's theory on the pattern of the electromagnetic theory which spoke of electric and magnetic fields. He tried to find a field theory of gravitation.

Einstein tried to adapt the law of motion of a mass point in a gravitational field to the requirements of the special theory of relativity. One implication of the SRT was that when a body was falling its inertial mass would increase because of its speed. This investigation brought him face to face with the question of the relationship between inertial mass and gravitational mass.

INERTIAL MASS AND GRAVITATIONAL MASS

Now inertial mass is the measure of the resistance of a body to a force acting on it. If I were to push a cart, the speed with which it will move and the increase of speed (acceleration) would depend on how massive it is. The more massive the cart, the less will be the acceleration when I push it. This mass, which measures the inertness or laziness of an object, is called its inertial mass.

The effects of inertial mass can be seen in several common place phenomena. If the train in which we are travelling suddenly stops, we are thrown forward. This is an example of an inertial force acting on us. While travelling in a bus, when the bus makes a sharp turn, we are thrown sideways. This is also an example of an inertial force acting on us. These inertial forces are seen to arise from the acceleration of our frame of reference. In science, some examples of inertial forces are centrifugal forces and Coriolis forces.

Newton's theory of gravity says that the gravitational attraction depends on the masses of the objects. Here we are speaking about the attractive power of the masses. This gravitational attractive power of the object is called its gravitational mass.

The weight of a body is the result of the attraction of the earth on it. It expresses the gravitational mass of the body. We can measure gravitational mass by the weight of an object.

In 1890 the scientist R.V.Eotvos performed an ingenious

experiment designed to test the ratio of inertial mass to weight. On the basis of this experiment it was concluded that the two masses, inertial mass and gravitational mass, are equal to each other within one part to 10^8 (that is, one part in one hundred million). Further experiments have improved on this result. So the equality of inertial mass and gravitational mass had been well established.

Einstein realized that the principle of equality of inertial mass and gravitational mass was to be placed at the centre of any theory of gravitation. He says in his autobiographical book *The World as I see it*: "This law, which may also be formulated as the law of equality of inertial and gravitational mass, was now brought home to me in all its significance. I was in the highest degree amazed at its persistence and guessed that in it must lie the key to the deeper understanding of inertia and gravitation."

GRAVITATION AND THE GEOMETRY OF SPACE-TIME

On the basis of this principle of equality of inertial mass and gravitational mass Einstein argued that there was no difference between the effects of gravitational forces and inertial forces. We omit the details of the argument.(Please see *DRQ*). If a number of friends enter a lift, they experience a momentary increase in their weights just as the lift starts. This is because of the acceleration of the lift. To their original weights is added this additional weight that arises from the acceleration. We can say that there is an inertial field of force in the lift, since it is experienced at all points inside the lift. Is this inertial field different in quality from the gravitational field? Einstein postulated that the inertial field is the same as the gravitational field, not only for mechanical problems, but for all phenomena including electric and magnetic phenomena. This is called Einsteins's principle of equivalence.

Basing himself on this postulate and logic, he examined the situation of a ray of light passing close to the massive body of the sun. He based his calculations on this principle of the equivalence of gravitation and the field inside an accelerating lift. He derived the result that the ray of light would be bent slightly towards the sun. This prediction was made in 1915. It was actually verified by accurate measurements conducted by the astronomer Arthur Eddington

during the total solar eclipse of May 1919. This was indeed a dramatic proof of the correctness of Einstein's theory. He called this theory of gravitation the general theory, because he was dealing not with uniformly moving frames of reference but accelerated frames of reference as well.

On the basis of the postulate of the equivalence of all frames of reference, he considered a rotating frame of reference and tried to ask the question about the geometry of the space in such a frame of reference. Does the geometry we studied in school called Euclid's geometry hold? Is the sum of the three angles of a triangle two right angles? Is the ratio of the circumference of a circle and its diameter the same old constant pi? Einstein argued that in an accelerated frame, as well as in a gravitational field, these results do not hold. Slight corrections will have to be incorporated into the results of Euclidean geometry. In a gravitational field the geometry is non-Euclidean. A more general form of geometry discovered by Riemann was to be used.

Further we could not restrict ourselves to the three dimensional space but, because of the motions involved, time has to be incorporated. It is the construct of space- time that is to be the foundation of our geometry. Einstein linked the nature of space-time to the presence of matter which was responsible for the gravitation. He linked up geometry of space- time with the distribution of matter. *These were his famous field equations for gravity*. They relate geometric quantities, like curvature, on one side and physical quantities, like the motion and flow of matter, on the other side of the field equations. These are ten equations in all.

It may be stated here that Einstein went a step further and *identified gravitation with geometry*. This was a false step, as was shown later by the Marxist physicist V.A.Fock.in his book *The Theory of Space, Time and Gravitation*.

THE MAIN RESULTS OF THE GR, AND HOW GR CORREGTS NEWTON'S THEORY

Like his special theory of relativity, the general theory was also a revolutionary theory, in as much as it made further corrections to Newtonian mechanics and his theory of gravitation. Einstein applied

his field equations to the solar system. Here the gravitating object is the sun. The planets can be taken to be test particles. Einstein obtained the following results, which we give under three headings:

(a) The laws of Newton regarding gravitation are rederived as a first approximation of Einstein's theory.

(b) However, in addition to this, new predictions are made which cannot be derived from Newton's theory. These are:

(i) The path of a ray of light passing near a heavy body like the sun will be deflected towards it.

(ii) The path of a planet around the sun is not a closed ellipse, as required in Newton's theory, but an elliptical curve which is not closed but slowly turning in its plane forming something like a rosette.

(iii) The light emitted from a strong gravitational field, such as that of a star, and received on earth, will have a slightly longer wave length and appear to be redder. This is called the gravitational red shift.

These results have all been confirmed to a very high degree of accuracy.

GRAVITATIONAL WAVES

The theory of gravitation of Einstein differs radically from Newtonian theory in respect of the solutions of the field equations. Under certain assumptions, the field equations of Einstein's theory predict gravitational waves. If large masses have accelerated motions, then they emit energy in the form of gravitational waves.

In particular, the *emission* of energy by a certain pulsar (star pair) through gravitational waves was indirectly confirmed in the year 1979. Now, with the recent announcement on February 12, 2016 of the *detection* of gravitational waves by the Laser Interferometry Gravitational Waves Observatory (LIGO), the existence of gravitational waves has been finally confirmed.

Einstein's GR takes forward the work of Newton. It represents an advance in the theory of gravitation.

GR AND DIALECTICAL MATERIALISM

Before we go into the idealist distortions introduced into GR such as

the detailed properties about the posited *black holes*, we would show how the general theory of relativity further supports positions of dialectical materialism especially with regard to space and time. A full discussion of this matter is beyond the scope of this essay, and could be found elsewhere. (See for example *DRQ*).

The problems of space and time have held the attention of philosophers and scientists from ancient times. Two major views emerged in history: the view which considered space and time as independent entities existing prior to the existence of matter, and the view which considered that space and time depended on matter which was assumed to have priority.

The Pythagorean thinker Archytas, for example, considered that; "since everything which is moved is moved in a certain place, it is plain that the place where the thing which is moving or being moved shall be, must first exist. Perhaps it is the first of all beings, since everything that exists is in a place and cannot exist without a place."

Aristotle took the opposite stand on the question of space and time. He recognized the objective reality of space and time and contended that spatial properties and relations were inseparable from matter, having no existence outside matter.

We have already stated that Newton believed that there was an absolute space independent of matter in which all bodies moved as though in a receptacle, and that time flowed like a stream independently of all material processes.

The highly influential eighteenth century philosopher Immanuel Kant argued that space and time were concepts not derived from experience, but that they were somehow already rooted in the mind prior to any experience. In his arguments he used the assumption that the rules of Euclid's geometry (the only known geometry in his time) were absolutely true and admitted of no exceptions. He had pinned his arguments on the validity of the propositions of Euclidean geometry.

However, the mathematical work of Lobachewsky, Bolyai, Gauss and Riemann in the nineteenth century demonstrated that this assumption is not correct. The mathematicians had demonstrated the possibility of having geometries which were non-Euclidean.

The most revolutionary philosophical consequence of Einstein's theory of gravitation was that the physical space revealed by processes

such as light rays and test particles motions is in fact non-Euclidean. The special theory of relativity (SRT) had shown that space and time were meshed into one structure space-time, and this structure could itself be constructed by linkages between events. The GR takes this programme further by showing that the linkages themselves were determined by the presence of matter. Einstein says: "There is no thing as an empty space, i.e., a space without a field. Space-time does not claim existence on its own, but only as a structural quality of a field."

It will be easily seen that the above conclusion of Einstein is very similar to the position of dialectical materialism on space and time which is stated by Lenin when he quotes from Feuerbach. Lenin says: "it is not things that presuppose space and time, but space and time that presuppose things, for space or extension presumes something which extends, and time, movement, for time is indeed only a concept derived from movement, presupposes something that moves."

In short Einstein's SRT as well as GR fully support the stand of dialectical materialism on space and time as against the idealist views of Archytas, Newton and Kant.

III
SOME IDEALIST DISTORTIONS OF EINSTEIN'S THEORIES

We shall deal in this section with two idealist conclusions derived from the general theory of relativity, namely, what are called causal pathologies and the black holes.

A.CAUSAL PATHOLOGIES

The problem of causal pathology can be stated as follows: It is possible to prove that the theory of relativity is consistent with the existence of what are called closed time-like curves. A time-like curve in a space-time graph represents the motion of a particle. For example a straight line with a certain slope in the earlier mentioned graph could represent the motion of a car with a constant speed. Since a time-like curve represents the motion of a particle, a *closed* time-like curve would represent the motion of a particle which could return to its starting point at the starting time. For example a particle could start from Mumbai on January 1, 2016, travel to some distant place, say the

Moon, and return to Mumbai from the past and reach Mumbai on the same date, January 1, 2016.

Obviously, this leads to an impossible situation. For, a person could undertake an imaginary journey to the past in a rocket along such a path and return to his own past. Then he could arrange things in such a way, e.g., by killing his own grandfather, that the original journey did not take place. This goes against the principal of causality.

Thus the existence of such closed time-like curves constitutes a paradox. This is an example of a causal pathology. In modern literature on relativity and cosmology such a situation is avoided by making additional assumptions, such as the causality principle. *It is postulated that the space-time structure is strongly causal.* The field equations of the GR are not sufficient to avoid such causal pathologies.

Now let us examine why such a situation arises in the SRT and GR. We have seen that in the construction of space-time Minkowski was treating space and time on an equal footing, abstracting away the differences between space and time. In this process of abstraction, the actual difference between space and time is ignored. To have a better understanding of the reality it is necessary to follow Marx's advice, and "ascend from the abstract to the concrete".

Another fact to be understood is that, having found the *linkage* between the nature of the geometry of space time with gravitation, Einstein went ahead and *identified* space-time with gravitation. As we have pointed out, this was criticized by Fock. Einstein's followers like Hawking and Ellis, went further and made an identification of any abstract mathematical structure called a manifold having a Lorentz metric with physical space-time. Accordingly, any manifold with a Lorentz metric is a space-time, and hence represents a gravitational field. As Pankaj S.Joshi says, "When the manifold has dimension four, and when it is equipped with a globally defined Lorentzian metric tensor field, it is called a space-time." (Pankaj Joshi: *Global Aspects in Gravitation and Cosmology,* Oxford Univ Press 1993).

Minkowski's construction of space-time was given a mathematical structure by Einstein's gravitation theory, which defined the "interval" on the basis of the gravitating matter present, converting the space-time into a curved geometrical structure called a manifold. A manifold is like a smooth sheet of paper in which all directions are equivalent. The mathematicians who worked with Einstein's theory then justified working with the space-time manifold just as we work with a smooth

manifold such as a sheet of paper. The operations of cutting, pasting and folding of a paper again results in a manifold structure. The mathematicians, following Einstein, identified the gravitational field with the space-time manifold, and then started operating with this manifold just as you would work with the paper manifold.

What is the result of accepting such an abstraction as a space-time? If we have a rectangular sheet of paper, we may roll it up and paste a pair of opposite sides to form a cylinder. Thereby we create a two dimensional space in which we may, for example, go west and return from the east. Such spaces belong to our world of experience.

Now suppose we draw a space-time graph on a sheet of paper taking the space representation on a horizontal line(axis) and time representation on a vertical line (axis). Such a graph can be used to described, for example, the motion of a car on a straight road. Each point on the graph would represent the position of the car at a given instant of time. Such graphs are used in schools for solving problems graphically.

Having made a space-time graph as above, we are not allowed to roll up the time axis and to paste the opposite edges. Because if we did this we would be depicting a false situation where we could go into the future and return from the past to the starting point. We would have in this case, what is called a "closed time-like curve". The time axis would form such a closed curve.

Although such cutting and pasting does not affect the manifold structure, or the Lorentz metric, this operation destroys the capacity of the structure to represent reality faithfully because a fundamental property of space and time is denied in this new structure. It is essentially this way of using abstract mathematics on a proper representation that gives rise to such causal pathologies.

CONTRIBUTION OF ALEXANDROV

We have referred to the work of the Russian mathematician A.D.Alexandrov who dealt with the problem of space and time as depicted by Minkowski, but also incorporated the difference between space and time. He defined space-time as the set of all events in the world abstracted from all its properties except those that are determined by the effect of some events upon others. On the basis of

the physical relationship of cause-effect, using the technical device of the light cone, he was able to reconstruct space and time.

Alexandrov established a close connection between the light-cones and the Lorentz transformations of Einstein's special theory of relativity Einstein.

It is to be noted that even when we go beyond the realm of the special theory of relativity and study general space-times, such as of GR, which are not given by Minkowski's definition of interval, a structure can still be given to space-time using the light cones. This structure is called the Alexandrov topology.

MANIFOLD TOPOLOGY AND ALEXANDROV TOPOLOGY

We have seen that the field equations of general relativity do not rule out such diseases as causal pathology. You can have in the GR closed time-like curves. In order to avoid such problems, additional postulates are required. The root of this problem is the treating of space-time like a sheet of paper, or as a manifold. The manifold structure which treats space and time as equal, abstractly, gives rise to problems. It can be proved that the manifold topology is inadequate for avoiding such causal pathologies. Roger Penrose has shown that the Alexandrov topology does not pose such problems.

He has shown mathematically that the space-time described by the Alexandrov topology is free from causal pathologies. He shows that if the manifold topology does not suffer from causal pathologies, then the structure it defines coincides with Alexandrov topology. Conversely, if the manifold topology agrees with the Alexandrov topology then it is strongly causal (that is, there are no causal pathologies).(For details see *DRQ*)

To sum up this discussion, we can say that from Einstein's work Minkowski constructed space-time through the process of abstraction, where the differences between space and time were ignored. We had an inverted structure where you could travel into the past, kill your own grandfather and ensure that you were not born, so that the original journey does not begin! Alexandrov, by recognizing the diverse qualities of space and time in concrete reality, reconstructed space-time on a material basis.

With Minskowski space-time was standing on its head.

Alexandrov did to Minkowski the service Marx rendered to Hegel when he set his dialectics back on its feet.

B.BLACK HOLES

According to the general theory of relativity, the final stages of certain types of stars can only be structures called black holes, with some amazing properties, that go against the principles of dialectical materialism. Some such properties are: of matter disappearing into a point, structures having no internal contradictory motion but only inward motion, or of matter entering a so called 'event horizon' from which no information is in principle possible to obtain.

Of all the laws of dialectics the central one is concerned with the unity and struggle of opposites and the corresponding category of contradiction. Astronomy provides ample examples of the operation of this law of contradiction in the processes of nature. One example is the constant working of contradictory processes in all stages of the development of a star.

The condensation model, which is the most widely accepted, assumes that stars are formed by condensation of huge clouds of gas and dust found in the galaxies. Gravitation is the main force at this stage. If the cloud is above a critical size it starts condensing due to the gravitational attraction of the parts to each other. Smaller clouds dissipate due to the motion of the particles. Note that it is at a critical quantitative stage that dissipation becomes condensation – an example of quantity changing to quality. This critical size happens to be a mass equal to hundreds of ordinary stars. Hence from such a cloud hundreds of stars can be formed.

At a certain stage of condensation, because of instability, the cloud breaks up into sub-units called protostars. In the next stage the fragment gets further condensed because of gravity and becomes an object which emits light. It has become a star. Here, as condensation proceeds, the gas gets heated up and massive pressure is built up. It is this pressure (thermal pressure) which keeps the system stable without collapsing due to gravity.

The process of heating up continues until the temperatures are high enough to start nuclear processes within the central region. Here again there is a critical stage when the repulsive forces between the

hydrogen nuclei is broken by the energy of the particles so that they can coalesce to form helium nuclei. This is another example of the law of quantity getting transformed into quality. But this is also an example of the play of the opposing forces of thermal pressure and gravitational attraction. The star has now become a thermonuclear reactor, producing huge quantities of energy.

The star remains in this stage, converting hydrogen into helium for a long period of time (running into thousands of millions of years). Our own star, the sun, belongs to this class of stars. During this phase the star is in equilibrium. But gradually inhomogeneities develop in the core of the star as the hydrogen gets depleted and the content of helium increases. The star adjusts to the new situation by the expansion of its outer part and the further condensation of its core. The temperature of the core rises further until new processes start within its interior. This is the nuclear process of conversion of helium onto carbon. Again, opposite forces are at work, the attraction due to gravity and the pressures developed by the new energy sources.

We shall not go into a further narration of the successive stages of development of stars, different scenarios being seen in different conditions such as of the masses of the stars. In each case, there is a struggle of opposite forces, the gravitational attraction and the pressures being provided by different modes of energy production. We can observe stars in different conditions, the so called red giants, the white dwarfs, the neutron stars, and pulsating pairs of stars called pulsars.

The white dwarfs are stars which have reached an extremely high density. The brightest star in our hemisphere, Sirius (Vyadh), has a faint companion star which is a white dwarf. The white dwarf has a new method of providing oppostional pressure to gravity, by what is called pressure due to degenerate matter. For stars which had masses more that the above requirement of white dwarfs, they become what are called neutron stars. Neutron stars have densities around 100 times the density of white dwarfs. Here again gravity and pressure act in opposite senses, inwards and outwards, providing a confirmation of the dialectical law of the unity and struggle of opposites.

In the case of still heavier stars, they can explode into supernova, or they can get compressed until they become smaller than a critical size given by the general theory of relativity called the Schwarzschild

radius. A supernova results when the inner part of the star, its core, collapses and releases energy to such an extent that the outer region, its mantle, explodes. In a sense this is the death of the star.

The inner part becomes a white dwarf or a neutron star (pulsar).The outer mantle continues in a new form of motion. Inner contradictions are still at work.

WHAT HAPPENS WHEN THE FUEL IS EXHAUSTED?

The second possibility of a star, which has exhausted all the above sources of energy, is that it will continual keep on shrinking till it becomes smaller than its Schwarzschild radius. This would result in what is called a black hole. According to a solution of Einstein's field equations of gravity developed by the mathematician Schwarzschild, there is a quantity for each attracting body called its Schwarzschild radius R. (For the Sun the quantity R = 1.5 miles, and for the earth it is just 9 millimeter).

A star which has exhausted its nuclear fuel would go into this stage of a black hole if its mass is above a certain critical size, called the Chandrasekhar limit, so named after the Indian Nobel prize winning astronomer S.Chandrasekhar. What would be the behavior of such objects whose radius is less that the Schwarzschild radius?

The gravitational field inside such an object (the black hole) would be so strong that even the light emitted by it would be pulled back. In fact the geometry of space-time inside the Schwarzschild radius would be such that the light cones would bend inwards, and thus there is only one form of motion, namely motion inwards. Any object in the vicinity of the black hole would be attracted inwards. There would be no way to know anything about the matter in the black hole. All the material would shrink ultimately into a point of infinite density. Such a point is called a singularity. This is called gravitational collapse. There is a theoretical sphere surrounding the black hole called the event horizon which swallows all information about objects falling within. Because of the event horizons which prevent information from coming out, all black holes are of the same form except for their mass, angular momentum and charge. In this sense all black holes are bare. Hawking and Penrose have described this situation by saying that a black hole has no hair!

From the viewpoint of GR, anything that happens to matter inside the Schwarzschild sphere cannot even in principle be known by the external observer. Physically this situation imposes limits on the knowledge of how matter evolves. This is a philosophical position which is consistent with bourgeois philosophy. We have already quoted the position of scientific realism that there are some truths that may lie beyond the furtherest reach of our knowledge seeking powers. Are we to accept this position about the world? Or are we going to examine the assumptions that have led to these conclusions about black holes? We will thereby attempt to defend the position of dialectical materialism that *the world not only exists but is knowable.*

IN DEFENCE OF DIALECTICAL MATERIALISM

This situation calls for the defence of dialectical materialism. In this case, we examine the postulates on the basis of which mathematics inexorably draws the conclusions about space-time around such an object. One postulate, of course, is that the general theory of relativity is absolutely valid even in the situations where matter is assumed to have densities which have never been dealt with observationally, and no occasion has been present where the principle of equality of interial mass and gravitational mass has been tested in such circumstances. Another postulate is the so called energy condition, which is at the basis of all the theorems on black holes. We shall not go into details (Please see *DRQ*). But let us take the first assumption about the absolute validity of the GR.

The Marxist scientist V.A.Fock had put Einstein's general relativity to a detailed criticism. In 1959 he wrote a foundational book, *The theory of space,time and gravitation.* He showed how Einstein was mistaken in assuming the identity of the geometry of space-time with the physical gravitational field. By doing so he had reduced gravitation to a matter of the coordinate system, and technically the result was that in his gravitation theory there was no law of conservation, as in the case of electric and magnetic fields. *Thus a gravitational field could be just switched off by taking up new system of coordinates.* The identification of inertial fields with gravitational fields was also shown to be faulty.

From the point of view of mathematics, Fock showed that the

number of equations in Einstein's field equations (which is ten) was not enough to actually determine the structure of the geometry and the coordinate system. He also debunked Einstein's belief that he had proved the equivalence of all frames of reference, including accelerated frames, which had made Einstein call his theory *the general* theory of relativity.

Drawing upon Newton's theory of gravitation, where the gravitational field fades away with distance from the attracting body, Fock considered the case of island universes, with the condition that at infinity, the geometry should be flat. Hence there was a natural coordinate system, *the harmonic coordinates*, which held a cardinal place in the theory. With the four conditions for the harmonic coordinates, now the theory was able to determine the structure of space time associated with the gravitational field. He gave a new structure (metric) to space-time which was different from the earlier accepted 'Schwarzschild' structure.

Here it must be mentioned that, historically, for all practical work, Einstein's field equations were used along with the harmonic coordinates which provided the extra equations for determining the space-time structure. Even to prove the existence of gravitational waves, harmonic coordinates were used. *Dirac had recognized this* when he said, "For the discussion of gravitational waves, however, harmonic coordinates are very useful" (*General Theory of Relativity*, 1975).

Hence, strictly speaking, the 1979 experiments that indirectly proved the emission of gravitational waves by pulsar stars, as well as the recent detection of gravitational waves by *LIGO*, are actually confirming the joint working of (a) Einstein's field equations along with (b) the harmonic conditions; i.e. ten equations plus four equations, respectively.

Fock's work was further continued by Denisov and Logunov in 1982.They took over Einstein's grand idea that gravitating matter determined the geometry of space-time, but insisted that gravitational fields should be material fields having conservation laws like the electromagnetic and other fields. Their theory called the relativistic theory of gravitation (RTG) reaffirms Fock's work but does not require the assumption of island universes. Technically, the RTG has four equations in addition to the field equations generally called the Einstein-Hilbert equations. Hence there is no need for additional assumptions.

In this theory, RTG, the gravitational field is a physical field with a conservation law. It cannot be switched off by a choice of coordinates since it is a material substratum. It describes the entire body of gravitational experiments, and shows that Einstein's formula for gravitational waves follows directly from the theory. Most important for the present discussion is that gravitational collapse does not lead to infinite contraction of matter. In the RTG there are no black holes, for there can be no objects having radius less that a certain quantity related to their mass. There are no objects in which the gravitational collapse results into black holes.

OTHER THEORIES AND THE BLACK HOLES

Jayant Narlikar and Fred Hoyle had worked with Einstein's field equations and amended them in order to bring in a C-field to account for the creation of particles in the field of gravity. This was to neutralize the fall in density of matter as the universe expanded in the so called Big Bang model of the universe. With the introduction of the C-field, they derived the result that gravitational force which was seen to be attractive through and through, would exhibit the property that when particles came very close, *attraction would change to repulsion*. This was exactly as predicted by Engels over a hundred years ago. In their theory also there was no scope for the existence of black holes.

Working with Einstein's general theory, Hawking later on came to the conclusion that black holes would radiate energy because of what is called pair production. In space near the black holes, because of a result in quantum mechanics, there would be pairs of particles of positive energy and negative energy produced spontaneously, and equally spontaneously they would annihilate each other. Some of the particles of negative energy could be swallowed by the black holes while the corresponding particles of positive energy would come out in the form of a radiation. By studying the situation quantitatively, Hawking came to the conclusion that the radiation coming from a black hole took the form of thermal radiation. He also showed that the negative energy particles which were swallowed would reduce the mass of the black hole. The black hole would eventually be eliminated. He called this as "black hole evaporation". In his book *A Brief History of Time* he described this by saying that *black holes ain't so black*.

More recently, Hawking went back on some of his earlier predictions that black holes would swallow all information, and admitted that some of his predictions were wrong. As black holes disintegrate, *they send their information content back into the world.*

Even more recently, working on the same lines as Hawking, and following the work of W.G.Unruh on black hole evaporation, an American scientist, Laura Mersini-Houghton, in a note dated 15th September 2014, declared that black holes were just not possible!

She says that the evaporation of the collapsing star can equivalently be described as a negative flux of radiation travelling *radially inwards* towards the centre of the star. "We include the back radiation of the negative Hawking flux. We find that quantitatively the radiation emitted by the star just before it passes the Schwarzschild radius reduces the mass of the star substantially, and so the star bounces back. There is no black hole!"

This is still in the stage of investigation. But what is clear from this is that the above mentioned attacks on the laws of dialectics were premature. Contradictory processes are seen to be working at the level of the interior of stars even in this posited stage. Knowledge is not, in principle, unavailable through the short-circuiting of matter in the black hole. And most important, *matter does not disappear.*

DIALECTICS OF THE INFINITY OF NATURE

From the above discussion we see that dialectical materialism is not demolished by the new discoveries of science, even though every important discovery is sought to be presented in such a way that idealist philosophy is reinforced. But let us take these laws of dialectics a little further. Lenin's law of the inexhaustibility of nature should lead one to the law that matter in *motion* is inexhaustible.

Lenin deals with Hegel's *Book on the Doctrine of Essence*. He quotes marginally that what Hegel says about infinite movement of being is of "objective significance", and he quotes: "*Essence...is what it is...by virtue of its own infinite movement of Being.*" (*Collected Works* Volume 38).

Inexhaustibility of motion would mean that by withdrawing energy it would not be possible to reduce matter to a state of motionlessness, where the internal motion is zero. This immediately

suggests the possibility of inexhaustible reservoirs of energy in nature. Here it may be pointed out that the present theories of the nuclei of galaxies are not able to account for the tremendous outbursts of energy from these nuclei.

Gravitational fields appear to be seats of tremendous amounts of energy. This is reflected in the *negative sign* we give to the potential energy of gravitation. The Hoyle-Narlikar theory relates the formation of new galaxies to the withdrawal of energy from this negative reservoir of energy. While discussing the C-field in his book *The Nature of the Universe*, Narlikar gives the argument as to why they took it as a negative field. From a negative field if we withdraw energy, the field does not get exhausted but becomes even more negative. In algebra, if from *negative 5* we take away 2, it becomes *negative 7*. So we get out 2 as a positive quantity, without affecting the negativity of the source!

The concept of *negative energy* is also used in some of the theories of the positron, and also in the calculation by Hawking regarding the way energy is withdrawn from a black hole through pair production. Similarly, in the work of Unruh as well as the recent work of Laura Mersini-Houghton, the concept of pressure of the negative Hawking radiation is used. Negative energy, it appears, reflects the infinity of motion of matter.

VLADIMIR A FOCK

When we say that the scientists A.D.Alexandrov and V.A.Fock were Marxists, it is to demonstrate that only through the conscious use of the Marxist philosophy of dialectical materialism were they able to rescue relativity physics from the idealistic misappropriation of the theory by bourgeois philosophers in order to use it for their own class purposes. In fact, in his preface to his 1959 work, *The theory of space, time and gravitation,* Fock acknowledges his debt to Lenin's book *Materialism and Empirio-Criticism*, which helped him "to approach critically Einstein's point of view concerning the theory created by him and to think it out anew".

It has been said that while V.A.Fock helped rescue general theory of relativity from idealistic distortions, "Fock was a firm supporter of the Copenhagen interpretation throughout his life". Let us look into this charge.

Fock was born in 1898 and died in 1974. He was one of the founders of quantum theory and was responsible to bring quantum theory into the Soviet Union through his book *Foundations of Quantum Mechanics* in 1931, where he introduced the latest work of Dirac about the existence of the positron. In fact he did foundational work in quantum mechanics, and this is seen in the several processes which are named after him. For example, in 1926 he derived the Klein-Gordon equation, and in 1930 he developed the Hartree-Fock method.

But to say that he was a firm supporter of the Copenhagen interpretation would be as much of a howler as to say that Schrodinger, another founder of quantum theory, was a firm supporter of the Copenhagen interpretation. It is well known that Schrodinger and Einstein were among those who ferociously attacked the Copenhagen interpretation.

The Copenhagen interpretation was the idealist interpretation of certain results of quantum theory which was introduced by Niels Bohr, the influential physicist from Copenhagen. The Copenhagen interpretation should be distinguished from the quantum physics of that time. It may be of interest to note that even in this book of 1931, Fock was critical of some assumptions of Dirac about the sea of electrons filling up all of space. He was also critical of Niels Bohr's idealist stand.

Fock's opposition to Bohr and his principle of complementarity is seen in the first chapter of the book itself. He considered it of prime importance to formulate the basic concepts of quantum mechanics from a proper materialistic standpoint. The revised edition of the book, published posthumously in 1976, has the following comment in its foreword about his discussions with Niels Bohr: "In fact, there is evidence that Fock's criticism of 'non-observability in principle' prompted Bohr to abandon this idea in his later views."

The Copenhagen interpretation is the agnostic stand of '*non-observability in principle*' in quantum theory. Fock, as a dialectical-materialist, opposed this stand in quantum mechanics, even as we have, in this essay, opposed such a position (of non-observability in principle) with regard to black holes in the general theory of relativity.

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DOCUMENT

*Excerpts from the Report to the 12th National Party Congress of the Communist Party of Vietnam**

The Party XIIth National Congress is tasked with taking stock of the implementation of the Party's XIth Congress Resolution; looking at the last 30 years of renewal; determining orientations, objectives and tasks in the 2016 – 2021 five-year period; reviewing the leadership of the Party's XIth-tenure Central Committee; assessing the observance of the Party's XIth-tenure Statutes; and electing the Party's XIIth-tenure Central Committee.

I. STEADFASTLY MARCHING ON THE ROAD OF RENEWAL

Over the past five years, apart from opportunities and advantages, the world and region have seen highly complicated developments; the world economy has recovered slowly; political crises have broken out in many areas and countries; multi-dimensional competition has become increasingly intense among major powers in the region; the situation in the East Sea has evolved intricately, etc. All has exerted an adverse influence on our country. Inside the country, right at the

* *Excerpts from* the Report delivered to the 12th National Party Congress of the Communist Party of Vietnam by Party General Secretary Nguyen Phu Trong.

beginning of this tenure, impacts of the global financial crisis and economic slowdown combined with inherent unresolved limitations and flaws of our economy, shortcomings and weaknesses in leadership and management, as well as newly emerging problems have driven up high inflations, seriously affected the macro-economic stability, growth rates and the population's living standards. Natural disasters, diseases and climate change have inflicted heavy losses. The needs to ensure social security and social welfare have kept growing. Meanwhile, considerable resources have had to be spared to secure national defense and security and safeguard national sovereignty given the emerging dynamics in the regional and international situation. Against such a backdrop, our entire Party, people and armed forces have made all-out endeavors to implement the XIth Party Congress Resolution, recording important achievements .

The economy has overcome numerous difficulties and challenges, its scale and potentials improved; its macro-level stability has basically been sustained, inflation kept under control; its growth maintained at reasonable rates and gradually recovered since 2013, becoming higher one year after another. Efforts have been focused on innovating growth models, restructuring the economy and putting in place the 3 strategic breakthroughs, thus yielding initial positive outcomes. Education and training, science and technology, culture, social affairs and healthcare have enjoyed a measure of development. Social security has been better attended to and fundamentally ensured whereas the people's living standards have witnessed continued improvement. Social and political stability has been maintained; national defense and security have been enhanced; the struggle to safeguard firmly national independence, sovereignty, unity and territorial integrity and to preserve peace and stability has been conducted resolutely and persistently. Foreign relations and international integration have been increasingly intensive, extensive and efficient. Our country's international status and prestige have kept heightening. Socialist democracy and great all-nation unity strength have continued to be promoted. Party building and building of the political system have been attended to and in return produced important outcomes.

However, renewal remains to be unharmonious and incomprehensive. Certain socio-economic targets have failed; many targets and criteria constituting the goal for ours to become basically

an industrialized country toward modernity by 2020 have not been fulfilled. Many limitations and weaknesses in education and training, science and technology, culture, social affairs and healthcare have been slow to be surmounted. Considerable difficulties have remained in the livelihood of a segment of the population, especially those in remote and hinterland areas. The four dangers pinpointed by the Party have remained in existence, with complicated developments visible in certain respects. Deterioration in political ideology, morality and lifestyle among a not-small portion of public cadre and Party members, as well as red tape, corruption and wastefulness have yet to be rolled back. Certain aspects in Party building and building of the political system have been marked by retarded progress.

The 30 years of renewal represent an important historical stage in the cause of building and defending our country, marking the all-sided maturity of our Party, State and people. Bearing the posture and significance of a revolution, renewal is a profound, comprehensive and radical transformational process, and a great revolutionary cause of our entire Party, people and armed forces for the goal of "a prosperous people, a strong, democratic, equitable and advanced country".

In a panoramic view, in the course of 30 years of renewal, our country has attained great achievements of historic significance on the road of building socialism and defending the socialist Homeland. At the same time, there have remained measurable, complicated problems and many limitations and weaknesses that need focused efforts to resolve and overcome in order for the country to develop rapidly and sustainably.

The great and historic achievements recorded in the 30 years of renewal have affirmed the Party's renewal policy as being judicious and creative; and our country's path to socialism as being suitable to Vietnam's realities and history's development trend. The achievements recorded and the lessons of experience drawn from reality have created an important premise and cornerstone for our country to continue with its renewal and vigorous development in the years to come.

The new period requires that national development be more comprehensive and concerted politically, economically, culturally and socially as well as in defense, security and external relations, with socio-economic development as the centerpiece; Party building as

'the key; cultural and human development as the spiritual foundation; and enhanced national defense and security as a vital and constant task.

It is imperative to continue innovating vigorously ways of thinking, creatively applying and developing Marxism-Leninism and Ho Chi Minh Thought, remaining steadfast in the goal of national independence and socialism; enhancing reality sums-up and theoretical studies, making accurate forecasts, and providing timely guidelines and policies to effectively resolve newly emerging problems posed by reality; tactfully tackle major relations that reflect the law of renewal and development in our country: relations between renewal, stability and development; between economic renewal and political renewal; between complying with market laws and ensuring the socialist orientation; between developing production forces on the one hand and building and gradually completing the production relations on the other; between the State and the market; between economic growth on the one hand and cultural development, execution of social progress and equity on the other; between building socialism and defending the socialist Homeland; between independence, autonomy and international integration; between the Party's leadership, the State's governance and the people's ownership; etc.

In the next five years, the world and regional situation will witness many extremely complicated developments, exerting a direct impact on our country, and generating both opportunities and challenges. Yet peace, national independence, democracy, cooperation and development will remain the major trend. Globalization, international integration, the scientific-technological revolution and a knowledge-based economy will continue to be boosted. The Asia-Pacific, in which the Southeast Asian region has become a community, will continue to represent a center of dynamic development with an increasingly important strategic geo-economic and geo-political location; at the same time, this region will also represent one of strategic competition among certain major powers and one with many factors of uncertainty; disputes relating to territories and sovereignty over seas and islands in the region and the East Sea continue to occur in an acute manner.

Domestically, the country's posture, strength and aggregate power

will be augmented, its international prestige increasingly heightened. Our country is to fulfil all commitments as a member of the ASEAN Community and WTO, accede to new-generation free trade agreements, and integrate into the international community much more intensively and extensively than before. Development opportunities and chances for will widely unfold. However, many difficulties and challenges will remain. The four dangers pinpointed by our Party will still exist, especially the danger of economically lagging farther behind other countries in the region and the world and the danger of "peaceful evolution" staged by hostile forces to sabotage our country; degeneration in political ideology, morality and lifestyles, and manifestations of "self-evolution" and "self-transformation" among a portion of cadre, Party members, public employees and Government-contracted employees, as well as the existence and complicated developments of red-tape, corruption and wastefulness, etc.

To make the best of and bring into full play the opportunities and advantages while overcoming difficulties and challenges, our entire Party, population and armed forces must be united and determined to redouble efforts to build our Party clean and strong, enhance the Party's leadership capacity and combativeness, and build a strong political system. To promote the entire nation's strength and socialist democracy. To push forward the renewal process in a comprehensive and synchronous manner; develop the economy fast and sustainably, and strive for ours to soon become basically an industrialized country toward modernity. To improve the people's material and spiritual living standards. To resolutely and persistently struggle for the firm defense of our Homeland's independence, sovereignty, unity and territorial integrity as well as the safeguarding of the Party, State, people and socialist system. To preserve peace and stability, proactively and actively integrate into the international community, and to elevate Vietnam's status and prestige in the region and the world .

While striving for key economic, social and environmental targets as stated in the Socio-Economic Report, we should continue to be innovative and creative in leadership and governance. To focus on further improving the institution of a socialist-oriented market economy, which operates fully, synchronously and effectively by market laws. The State is to use institutions, laws, resources, regulating tools,

and distribution and redistribution policies to develop culture, practice democracy, social progress and equity. To ensure rapid and sustainable development on the basis of macro-economic stabilization, ever increasing productivity, quality, effectiveness and competitiveness; closely link economic development with cultural and social development and environmental protection. To further improve the socialist law-governed State, increase effectiveness and efficiency of the State's governance and development orientation; and to create an enabling environment for creativeness, democracy promotion, and human and civic rights protection. To maximize domestic resources while effectuating proactive international integration as well as efficient mobilization and utilization of external resources.

II. DEVELOP FAST AND SUSTAINABLY, AND STRIVING FOR OURS TO SOON BECOME BASICALLY AN INDUSTRIALIZED COUNTRY TOWARD MODERNITY

The goal of turning ours into basically an industrialized country toward modernity in 2020 was determined as early as at the VIII th Party Congress and in fact, over the past 20 years, our entire Party, population and armed forces have tried their best to this end. However, due to various objective and subjective reasons ly, a number of targets and criteria as part of this goal have failed. In the next 5 years, more forceful endeavors are to be made and fast and sustainable economic development recorded with a view to soon achieving this goal. Especially the following major orientations are to be aware of and implemented effectively:

To continue innovating growth models and restructuring the economy; to push forward industrialization and modernization attached with promotion of a knowledge-based economy; to further improve the institution and develop a socialist-oriented market economy

This is a major and important policy decision, which was raised right at the XI th Party Congress. In the coming time, this process will need a continued push along the line of combining efficiently extensive development with intensive development, with importance attached to intensive development, improved growth quality and competitiveness on the basis of increased productivity, application of

scientific and technological advances, innovation and creation, improvement of workforce quality, promotion of comparative advantages and proactive international integration; ensured harmony between immediate objectives and long-term goals, between economic development and ensured national defense and security; between economic growth on the one hand and cultural development, implementation of social progress and equity, environmental protection, and improvement of the population's material and spiritual living standards on the other. The most important driving force which is at the same time the condition for innovating growth models is to intensify research, application of science and technology, innovation and creation.

To continue pushing forward the concerted and holistic restructuring of the economy as well as different sectors and fields in association with growth model innovation, concentrating on essential fields: restructuring investments with focus placed on public investment; restructuring the financial market with focus being the system of commercial banks and financial institutions, step by step restructuring the State budget; restructuring and properly addressing the bad debt issue, ensuring public debt safety; restructuring State-owned enterprises with focus put on State groups and corporations; restructuring agriculture along the line of raising added value and linking with rural economic development and building of a new-type countryside. To further implement the three strategic breakthroughs, particularly the one on the institution of a socialist-oriented market economy, with a view to vigorously liberating production forces, mobilizing, distributing and using efficiently available resources.

To focus on building a national industry and industrial brand name with medium- and long-term visions, and with a roadmap for each stage of development; to develop on a selective basis a number of manufacturing and processing industries, high-tech industries, clean industry, energy, mechanical, electronic and chemical industries, construction and installation industries, defense and security industries. To develop agriculture and rural economy linked to the building of a new-type countryside; to build agriculture toward large-scale commodity production, hi-tech application, improved product quality, and ensured food hygiene and safety; higher added value and

export promotion; to adopt appropriate policies to accumulate and concentrate lands. To further develop the services sector toward modernity with a growth rate higher than that in various production sectors and higher than the growth rate of the economy as a whole. To focus on developing certain services subsectors with an advantage and with a knowledge and hi-tech content. To vigorously develop marine economy in order to enhance the national economic potential and safeguard our sea and island sovereignty. To promote each region's potentials and advantages, at the same time give priority to the development of economic engine regions; to adopt policies aimed at supporting the development of regions fraught with difficulties, especially hinterland and remote regions, and ethnic minority, mountain and island regions; to build a number of special economic zones. To step by step set up an urban system with synchronized, modernized and environment-friendly infrastructures. To further mobilize and effectively utilize social resources with a view to continuing to focus investments on establishing a relatively synchronized socio-economic infrastructure system with some modern public works.

To continue achieving unified perception of a socialist-oriented market economy in Vietnam as an economy operating in full conformity and in tandem with market economy laws, while ensuring the socialist orientation in accordance with each stage of national development. That is a market economy which is modern and integrated internationally; under the administration of a socialist law-governed State and the leadership of the Communist Party of Vietnam, aiming at the goal of " a prosperous people, and a strong, democratic, equitable and advanced nation "; having progressive relations of production that match the development level of forces of production, with multiple forms of ownership, various economic sectors, of which the State sector plays the leading role and the private sector is an important engine of the economy; where all economic actors are on an equal footing, cooperate and compete with each other in compliance with laws; the market plays the main role in mobilizing and allocating development resources in an efficient manner, and is the principal driving force to liberate forces of production; State resources are to be allocated according to strategies, schemes and plans in conformity with market mechanisms. The State's role is to provide

guidance, formulate and complete the economic institution, create a fair, transparent and healthy competitive environment; use tools, policies and resources at the State's disposal to guide and regulate the economy, push up production and business and protect the environment; and to achieve social progress and equity in each step and through every single development policy. To bring into play the role as owners of the people in socio-economic development.

The above-mentioned perceptions need to be further specified and institutionalized in accordance with each stage of development in the transition to socialism.

To fundamentally and comprehensively reform education and training; to develop human resources and improve their quality; to enhance potentials and boost science and technology application.

To link closely economic policies with social policies and economic development with improvement of the people's life quality, ensure that the people enjoy ever better fruits of the renewal process, national construction and development. Every individual can enjoy opportunities and conditions to fully develop his/her self. To well execute policies toward persons with meritorious service; to properly solve issues relating to labor, employment and income for working people; to ensure social security and enhance social welfare; to attach importance to the people's healthcare, population and family planning, protection and care for maternal and child health; to advance gender equality; to build happy family. To mobilize resources for healthcare development; to innovate financing mechanisms in association with improvement of healthcare service quality.

To proactively formulate and execute programs and plans in response to climate change and natural disaster control for every stage, and to inspect and monitor their implementation. For the time being, to focus on effectively handling flood, drought, landslide at river banks and coastal areas, saltwater intrusion, high tides, etc. which directly impact the people's life and production.

Firmly safeguarding the Homeland; maintaining an environment of peace and stability; improving foreign activity efficiency; being proactive and active in international integration

The vital objective of national defense and security is: To bring into full play the aggregate strength of the whole nation and the entire political system, to maximize the sympathy and support of the

international community, to struggle resolutely and persistently in order to firmly safeguard the independence, sovereignty, unity and territorial integrity of the Homeland, and to defend the Party, State, people and socialist system; to protect the renewal, industrialization and modernization process, and to defend the national interests; to preserve national culture; and to maintain an environment of peace, political stability, national security, and social order and safety.

To further improve the efficiency of foreign activities, continue deepening our cooperative relations . To enhance the efficiency of international economic integration, fulfill all international commitments and new-generation free trade agreements as part of an overall plan with a rational roadmap in accordance with our national interests. To strengthen and deepen our relations with partners, particularly the strategic partners and major powers that play important roles toward our country's development and security, and substantiate the established framework of relations. To proactively participate in multilateral mechanisms, particularly ASEAN and the United Nations and bring into play our role therein . To participate proactively and energetically in multi-lateral defense and security mechanisms, including in cooperation operations at higher levels, such as U.N. peacekeeping operations, non-traditional security exercises, and other activities. To push ahead international integration in the cultural, social, scientific-technological, education-training and other fields.

IV- PROMOTION OF GREAT NATIONAL UNITY STRENGTH AND SOCIALIST DEMOCRACY; BUILDING AND IMPROVEMENT OF A LAW-GOVERNED SOCIALST STATE

The great national unity represents a strategic policy of the Vietnamese revolution, and a great driving force and resource for national construction and defense. To strengthen the bloc of great national unity on the basis of the alliance of the working class with the peasantry and the intelligentsia under the Party's leadership. To promote vigorously all resources and creative potentials of the people for national construction and defense; to take as the common denominator the goal of making Vietnam a land of peace, independence, unity and territorial integrity, one with " a prosperous people and a strong,

democratic, equitable and advanced country "; to respect divergences that are not contrary to the nation's common interests; to uphold the national spirit and the traditions of patriotism, humanity and tolerance to rally and unite all Vietnamese at home and overseas, to tighten the close-knit relations between the people and the Party and State, and to forge a new vitality for the great national unity bloc.

The great national unity is to be based on harmonious handling of interest-related relationships among members of the society; protection of the people's lawful and legitimate rights and interests; constant improvement of the people's material and spiritual life. All Party guidelines and stances and State policies and laws are to be in the interest of the people. Intra-Party unity is to constitute the nucleus and firm foundation of the great national unity. Party committees and State authorities at all levels are to frequently dialogue with the people, listen to them, learn from them, be receptive to their comments, and address their difficulties, problems and legitimate requests; enact concrete and appropriate forms, mechanisms and measures for the people to express their ideas and aspirations and exercise their right to ownership.

To pay attention to the building of the working class , peasantry, intelligentsia and a contingent of business, and the promotion of their role in meeting requirements of national development at the new stage. To attend to forging the younger generation, women, war veterans and the elderly, and bringing into play their role of. To properly implement laws and policies on ethnic groups and religion , and policies toward compatriots residing overseas . To innovate the operational substance and modes of the Fatherland Front and people's organizations in rallying and promoting the nation's great unity strength, properly exercising democracy, oversight and social counter-argumentation, enhancing social consensus, and participating in Party and State building and people-to-people external relations, thus contributing to national construction and defense.

Continue promoting socialist democracy, ensuring that all State powers belong to the people . Democracy is to be practiced fully and seriously in all aspects of social life. To ensure the people's participation in each and every step of the process that makes decisions concerning the people's interests and livelihood.

To institutionalize and improve quality of forms of direct

democracy and representative democracy. To further improve the legal system, to to respect, guarantee and protect human rights and citizens' rights and obligations in the spirit of the 2013 Constitution. To continue practicing properly democracy at the grassroots; to institutionalize and implement properly the motto " The people know, the people discuss, the people do, the people inspect ."

Promotion of democracy is to go along with enhancement of legislation, upholding of citizens' responsibility, observance of discipline and order, and heightening of social ethics. To criticize manifestations of extremist or formalistic democracy. To deal strictly with abuses of democracy to the detriment of political security and social order and safety as well as infringements upon democracy and the people's right to ownership.

Building and improvement of a socialist law-governed State is to conducted harmoniously in legislative, executive and judiciary bodies alike, synchronized with innovation of the political system toward compactness, effectiveness and efficiency; and in association with economic, cultural and social renewal. To improve the institutions, functions, duties and operational modes and mechanisms of a socialist law-governed State, and raise their effectiveness and efficiency. To continue pushing forward completion of the State apparatus and increase of its operational quality and efficacy.

To define clearly mechanisms for division of responsibilities and coordination in the performance of State power, especially mechanisms for power control among State bodies in the exercise of legislative, executive and judiciary powers on the basis of a unified State power; to further clarify their respective authority and responsibility.

To continue innovating the organization and operation of the National Assembly, to ensure that the National Assembly is really the highest representative body of the people and the body of highest State power. The National Assembly is to exercise properly its legislative function, take decisions on important issues of the country, and conduct supreme oversight, notably over the management and utilization of the country's resources. To improve the organizational structure of the Government, define more clearly the functions, duties and authority of the Government as the highest State administrative body exercising executive power, and the implementary body of the

National Assembly. To continue pressing ahead with implementation of the Strategy on Judicial Reform, to build a clean, strong, democratic and scrupulous judicial system that protects the law, protects human rights and citizens' rights, protects State interests, and protects the socialist system. On the basis of ensuring a unified, smooth, effective and efficient national administration, to define clearly the State governance competence and responsibility of the local government at different levels in accordance with the Constitution and laws. To further improve the structural model of local government in conformity with characteristics of rural areas, urban centers, islands, and special administrative-economic units as stipulated by the law.

V- BUILDING OF A CLEAN AND STRONG PARTY, IMPROVEMENT OF ITS LEADERSHIP CAPACITY AND COMBATIVENESS

During the past five years, in implementation of the XI th Party Congress Resolution, our Party has persistently and seriously put in place key tasks of Party building in three dimensions of politics, ideology and organization, hence important achievements.

In general, Party committees and organizations from the central to grassroots levels have focused on leading, guiding and organizing the implementation of the 4 th Central Committee Plenum Resolution on "Certain urgent issues in Party building at present" in a methodical and forceful manner and have achieved important initial results, creating positive changes in the political system, helping raise an alarm, a warning and a deterrent, while gradually checking and repelling negative practices and degradation in the Party. The process of self-criticism and criticism in the spirit of the 4 th Central Committee Plenum Resolution and efforts to overcome and redress the limitations and shortcomings have contributed to tightening intra-Party discipline and order, generated positive and initial changes in checking in certain respects degradation in political ideology, ethics and lifestyle in the Party, in overcoming certain limitations and shortcomings in personnel work and in the implementation of principles on Party life organization, especially those on democratic centralism, collective leadership and individual accountability. Many leading and managerial cadre at different levels have attached importance to raising their sense of accountability, improving their leadership and practical

guidance capacity, and innovating their working patterns; they have become more stern with themselves, taken care of ethics and lifestyles; made initial steps in overcoming their own shortcomings, and readjusting their working and living behavior and activity as well as those of their families and relatives. Initial progress has been recorded in containing and checking corruption and wastefulness. Many particularly serious and complicated cases of corruption have been uncovered, and investigated and tried scrupulously under focused guidance in conformity with law stipulations, subsequently enjoying appreciation, sympathy and support from public officials, Party members and the people. Many guidelines, principles, viewpoints and major solutions related to personnel work have been institutionalized and concretized into regulations, rules and processes that ensure democracy and greater strictness. The scheming, training, fostering and rotation of cadre have been pushed further ahead. The process of implementation of the 4th Central Committee Plenum Resolution has helped the country overcome difficulties, maintain political stability, ensure socio-economic development, and consolidate confidence in the Party and among the people.

In the implementation of the 4th Central Committee Plenum Resolution, certain things have fallen short of the objectives set by the Resolution. In the practice of self-criticism and criticism, cases of over-considerateness, evasiveness and clash-reluctance have been quite widespread, a number of cadre and Party members have not by themselves recognized adequately their shortcomings as well as their responsibilities toward limitations and shortcomings in their assigned work. As regards certain problems, reviews by Party committees and organizations from the central to the grassroots levels have failed to expose the true nature and gravity of the situations, their whereabouts and who to be blame. Party and State regulations have not been amended, complemented or newly promulgated in the direction of further upholding the responsibility and authority of chiefs of entities in the relations between the collective and individuals. Corruption and wastefulness have remained grave with increasingly sophisticated and complicated manifestations, causing resentments in the public opinion and affecting the people's confidence in the Party and the State. Degradation in political ideology, ethics and lifestyle among a portion of public officials and Party members has not been repelled;

in certain aspects and segments, developments have been even more complicated.

In overall evaluation, the work in Party building over the past 5 years has yielded important results. Our Party has firmly retained its political prowess, revolutionary and scientific nature, and has persisted in the objectives and ideals of national independence and socialism and in the line of renewal; therefore been the worthy leader of the State and society. Those results originate from the fact that our Party has always defined Party building as the key task; that the majority of cadre and Party members have been steadfast in ideological position and stance, in moral qualifications and ethics, and in playing a vanguard and exemplary role in the discharge of their responsibilities and duties; and that the political system and the people have involved in rectifying and building a clean and strong Party.

However, Party building has also revealed many limitations and shortcomings, being shown in various facets, substance and parts of work, of which, most notably are: the forecasting, planning and leading the organization for implementation of Party and State resolutions and policies have not been timely, coordinated and efficient; the leadership capacity and combativeness of not few Party organizations have remained low, and in certain places, not even any combativeness is left; the administration, education and forging of Party members in certain places have not been given regular attention; the quality of Party life has remained poor, and combativeness in self-criticism and criticism weak; the apparatuses of the Party and the entire political system have been cumbersome and multi-tiered, the operational effectiveness have been still low. The above-mentioned limitations and shortcomings have diminished the confidence of cadre, Party members and the people in the Party, the State and the system.

In the upcoming years, heavy requirements and tasks of the new development period call for a stronger push in Party building, with focus being determined and persistent continued implementation of the 4 th Central Committee Plenum Resolution. Party committees and organizations, collective leaderships of agencies and units, and individual leaders and managers from the central to the grassroots levels are to overcome and redress weaknesses and shortcomings seriously, self-consciously and with appropriate plans and measures.

Firstly, to attach importance to building the Party politically. To

persist in Marxism-Leninism and Ho Chi Minh Thought, to apply creatively and develop them in conformity with Vietnamese reality; to persist in the goals of national independence and socialism; and to persist in the renewal policy. To raise the political prowess, intellectual level and combativeness of the entire Party and individual cadre and Party members, first and foremost key leaders and managers at different levels; and not to waver in any eventuality. To retain firmly the working class nature of the Party, and the vanguard and exemplary role of cadre and Party members.

To innovate ideological and theoretical work and raise further its combativeness, persuasiveness and efficiency to meet requirements in the implementation of political tasks at different stages, generating a high level of unanimity within the Party and consensus in the society; to push forth dissemination and education of Marxism-Leninism, Ho Chi Minh Thought, Party viewpoints and guidelines, and State policies and laws in accordance with different target groups along the line of concreteness, practicality and efficiency. To continue innovating theoretical thinking; to push ahead reality sums-up and theoretical studies, provide scientific and theoretical argumentations for the elaboration and development of Party guidelines and stances and State policies and laws.

To enhance the cultivation of revolutionary qualifications, to combat individualism, opportunism and vulgar pragmatism. To focus on realizing the objective "To build the Party clean and strong politically, ideologically, organizationally and morally." To continue pushing further ahead the movement of learning and practicing after Ho Chi Minh's ideology, ethics and style in association with efforts to counter deterioration in political ideology, ethics and lifestyles as well as manifestations of " self-evolution " and " self-transformation ", red-tape, corruption, wastefulness, factionalism, " interest groups ", and failure to match words with deeds.

To continue innovating and completing apparatuses of the Party and the political system toward compactness and greater effectiveness and efficiency in leadership, guidance and execution; to complete functions and duties of cadre and public employees, as well as improvement of their quality; to clearly determine relations between collective leadership and individual accountability; authority is to couple with accountability and upholding of the accountability of

chiefs of entities. To improve and implement strictly power control mechanisms, to prevent abuse of power and violation of discipline and order.

To improve the structure, quality and operational efficiency of Party grassroots organizations, and to raise the quality of Party members. To focus on consolidating Party grassroots organizations of different types and raise their leadership capacity and combativeness, and innovate the substance, forms and methods and generate qualitative changes in their operations , notably those organizations in agencies, public service delivery units, and enterprises of different economic sectors. To complete structures, to ensure the Party's overall leadership at the grassroots. To cultivate a pool of Party members who are truly vanguard and exemplary, respectful and close to the people, who understand them and learn from them, and who are steadfast in the face of any difficulties and challenges, and prepared to strive for the Party's lofty goals and ideals.

To vehemently reform the personnel work while attaching importance to the work in internal political protection. To continue pushing ahead implementation of the " Strategy on personnel in the period of stepped-up national industrialization and modernization." To institutionalize and concretize principles of Party building. To continue with the promulgation and implementation of regulations, rules and mechanisms related to personnel work, ensuring unity, harmony and strictness between different stages and interconnection between different levels; including regulations on judicious and objective evaluation of cadre as the basis for their use and posting, to prevent and repel backhanders for hierarchical positions, age eligibility or education degrees, etc. To innovate intra-Party elections and modes of cadre selection and appointment, etc. with a view to picking those with truly good moral qualifications and ethics for leadership positions, especially as chiefs of entities. To focus on cultivating a pool of cadre, particularly those at the strategic level, with adequate capacity and qualifications, and up to duty requirements. To enact mechanisms and policies to identify, attract and utilize talents. To enhance the accountability of Party committees, especially at the grassroots level, in internal political protection.

To innovate Party inspection, oversight and discipline work, and raise their effectiveness and efficiency. To deal timely and scrupulously

with Party organizations and members violating the Party's Political Platform, Statutes, resolutions, instructives and regulations and the State's policies and laws, as well as those attempting to connive at or shield shortcomings and violations committed by Party organizations and members, and make the results public.

To continue innovating and raising the efficiency of mass mobilization work in conditions of development of a socialist-oriented market economy and international integration. To solidify the people's confidence in the Party, to strengthen the great national unity bloc and the close-knit relationship between the Party and the people. To rally and mobilize the people for proper implementation of Party guidelines and State policies and laws; and to timely and effectively address the people's pressing demands and legitimate recommendations as well as citizens' complaints and accusations. To promote the great strength of the people and forge a widespread revolutionary movement for national construction and defense.

To determine that the struggle against corruption and wastefulness is a day-to-day, important and at the same time difficult, complicated and protracted task. It is the responsibility of Party committees, especially heads of Party committees, State authorities and the entire political system to combat resolutely corruption and wastefulness; targeting proactive prevention of their occurrence; to deal timely and severely with cases of corruption and wastefulness, of attempts to shield, connive at, or abet such cases, or to interfere with and impede the struggle against corruption and wastefulness.

To forcefully innovate the modes of the Party's leadership vis-a-vis the political system, especially the State. To continue concretizing at all levels the modes of the Party's leadership as determined in the Political Platform (amended and developed in 2011) into specific regulations, rules and processes. To attach importance to cultivating culture in Party organizations, State bodies and the political system. To innovate the working methods, styles and patterns of the Party's leading bodies from the central to the grassroots levels, to cultivate a scientific, collective and democratic working style that includes closeness to the people, respect for the people, dedication to the people, attachment to practice, and association between words and deeds.

VI- KEY TASKS DURING THE XII TH TENURE CONGRESS

During the XIIth Tenure Congress, while the Congress Resolution is to be implemented comprehensively and synchronously in all fields, efforts are to be concentrated on the following key tasks:

Firstly , to enhance Party building and rectification; to prevent and repel deterioration in political ideology, ethics and lifestyles, as well as manifestations "self-evolution" and "self-transformation" from within. To focus on cultivating the pool of cadre, especially cadre at the strategic level, who are efficiently capable, qualified and credible, and commensurate to duties.

Secondly , to establish organizational apparatuses of the entire political system which are streamlined and operational effectively and efficiently; to step up the struggle against corruption, wastefulness and red-tape.

Thirdly, to focus on raising growth quality, labor productivity and competitiveness of the economy. To continue implementing efficiently the three strategic breakthroughs; to restructure holistically and harmoniously the economy in tandem with innovation of growth models; to push ahead national industrialization and modernization, with attention given to agricultural and rural industrialization and modernization in association with building of a new-type countryside. To attach importance to solving properly issues related to restructuring State-owned enterprises, restructuring the State budget, handling bad debts, and ensuring public debt safety.

Fourthly, to remain determined and persistent in the struggle to defend firmly the independence, sovereignty, unity and territorial integrity of our Homeland; to preserve a peaceful and stable environment for national development. To expand and deepen external relations; to practice efficient international integration in new conditions, and to continue raising our country's status and prestige in the international arena.

Fifthly, to attract and promote vigorously all resources and the people's creativeness. To care for material and spiritual life betterment, to solve properly pressing problems; to intensify management of social development, to ensure social and human security; and to ensure social security, improve social welfare and secure sustainable poverty reduction. To promote the people's right to ownership, and to bring into play the strength of the great national unity.

Sixthly, to promote the human factor in all aspects of social life; to focus on building the human person in ethics, personality, lifestyle, wisdom and working capacity; to cultivate a healthy cultural environment.

The XIIth Party Congress being one of unity – democracy – discipline – renewal affirms the determination to push ahead comprehensively and harmoniously the renewal process, ensure speedy and sustainable national development. The vivid and abundant reality and tremendous achievements together with profound lessons learnt from 30 years of renewal and 5 years of implementing the XIth Party Congress Resolution constitute the solid foundation for our Party to formulate judicious and correct decisions, and usher in a new, fine and glorious period of development of our country and nation. The singleness of mind and unanimity as well as the wholeheartedness and brainpower of our whole Party, people and armed forces represent an unlimited source of strength. We will definitely succeed on our path to socialism and building ours into a prosperous and happy country."

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The Politics of the Right

Socialist Register 2016

Edited by Leo Panitch, Greg Albo

9789380118307 | PB | pp. 400 | Rs 495 [for Members: Rs 347]

Today the left faces new challenges from political forces amassing on the radical right. The 52nd volume of the Socialist Register presents a serious calibration and a careful political mapping of these forces. It addresses pivotal questions on the reordering of the new right. These essays – very broad in terms of themes and places – speak to the global challenges the new right poses for the left at this historical moment.

What is the nature of the right's populism, nationalism and militarism?
What is the social base and organizational strength and range of far right political forces?
To what extent are they influencing mainstream parties and opinion?
How have they penetrated state institutions?
What role do state security services and police forces play?
Does our political situation today require comparison with 1930s Fascism?
How should the left respond to defend democratic and human rights?

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The Armchair Revolutionary and Other Sketches

By Saadat Hasan Manto

Edited, with an Introduction, by Ali Mir and Saadia Toor, translated by Khalid Hasan and with a Prologue by Nandita Das

9789380118284 | PB | pp. 231 | Rs 325 [for Members: Rs 228]

"I heap a thousand curses on a world, on a civilized country, and on a civilized society, which legislates that after death every person's character and personality must be sent to the laundry from where it returns having been cleaned in order to be hung on the hook of respectability."

Manto wrote these words in the preface to Ganje Farishte, a collection of his sketches. They give us a sense of what to expect from him: the 'unvarnished' truth as seen through his unforgiving gaze, and as captured by his sharp pen. Vivid and intimate portraits of well-known figures including celebrities such as Ashok Kumar, Nargis and Nur Jehan, they also document the social, political, and cultural milieu of that era.

Manto was a central and controversial figure on the subcontinent's literary scene from the 1940s until his untimely death in 1955. In their introductory essay to this collection, the editors offer evidence that Manto was a deeply political writer, one committed to radical humanism. Despite his often fraught relationship with the Progressive Writers' Association, he rightfully belongs within the fold of the progressives.

SAADAT HASAN MANTO (1912-1955) was among the greatest short story writers of the Indian subcontinent. He also wrote plays, and worked in the Bombay film industry as a writer before migrating to Pakistan after the Partition.

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Noise Uprising

The Audiopolitics of a World Musical Revolution

By Michael Denning

Foreword by Naresh Fernandes

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A radically new reading of the origins of recorded music.

Noise Uprising brings to life the moment and sounds of a cultural revolution. Between the development of electrical recording in 1925 and the outset of the Great Depression in the early 1930s, the soundscape of modern times unfolded in a series of obscure recording sessions, as hundreds of unknown musicians entered makeshift studios to record the melodies and rhythms of urban streets and dancehalls. The musical styles and idioms etched onto shellac disks reverberated around the globe: among them Havana's son, Rio's samba, New Orleans' jazz, Buenos Aires' tango, Seville's flamenco, Cairo's tarab, Johannesburg's marabi, Jakarta's kroncong, and Honolulu's hula. They triggered the first great battle over popular music and became the soundtrack to decolonization.

MICHAEL DENNING is the William R. Kenan, Jr., Professor of American Studies at Yale University, and the co-director of Yale's Initiative on Labor and Culture. He is the author of *Culture in the Age of Three Worlds*; *The Cultural Front: The Laboring of American Culture in the Twentieth Century*; *Mechanic Accents: Dime Novels and Working-Class Culture in America*; and *Cover Stories: Narrative and Ideology in the British Spy Thriller*. He coordinates the Working Group on Globalization and Culture, whose collective work includes "Going into Debt," published online in Social Text's Periscope, and "Spaces and Times of Occupation," published in Transforming Anthropology. In 2014, he received the Bode-Pearson lifetime achievement award from the American Studies Association.

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No Free Left

The Futures of Indian Communism

By Vijay Prashad

9789380118277 | PB | pp. 378 | Rs 395 [for Members: Rs 277]

"Vijay Prashad's commanding knowledge of the material . . . his passion for the subject and his meticulous research combine to show that for the left, new tomorrows await."

The Hindu

Over the past twenty years, the Indian political climate has shifted decidedly to the Right – with the BJP and the Congress dragging India into a growth trajectory that squanders the hopes of working people. The old consensus on Indian socialism is threadbare, and socialist parties in disarray.

The future of Indian communism is rooted in the popular hopes for a better tomorrow and in the popular discontent with the bitter present. *No Free Left* is a critical examination of the past of Indian Communism and an assessment of its future.

Most literature on Indian communism feels claustrophobic. It assumes that the communist movement lives on a detached landscape – its programme and political judgments are adjudged against a divine standard. A history of communism cannot be written, Gramsci said, without writing a "general history of a country." Vijay Prashad does exactly that.

No Free Left stays alive to the details of the present while drawing out the long term dynamic, combining a rich historical survey with acute political analysis of the present. It is a compelling work for students of Indian politics. For activists of the Left, it is indispensable reading. Above all, it is a live work, an invitation to debate and discussion.

VIJAY PRASHAD is the George and Martha Kellner Chair of South Asian History at Trinity College in Hartford, Connecticut, USA. He is the author or editor of several books, including *The Darker Nations: A Biography of the Short-Lived Third World* and *The Poorer Nations: A Possible History of the Global South* (both from LeftWord). He is a columnist for *Frontline* and *al-Araby al-Jadeed*. He is the Chief Editor of LeftWord Books.

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